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 1              UNITED STATES DISTRICT COURT
               EASTERN DISTRICT OF VIRGINIA
 2                  RICHMOND DIVISION


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                                 )
 4   THE TRUSTEES OF COLUMBIA     )
     UNIVERSITY IN THE CITY OF    )
 5   NEW YORK                     )
                                 )
 6   v.                           )    Civil Action No.:
                                 )    3:13 CV 00808
 7   NORTONLIFELOCK INC.          )
     f/k/a SYMANTEC CORPORATION   )
 8   _____     )
                                       April 22, 2022
 9
                            DAY 9
10            EXPEDITED OVERNIGHT TRANSCRIPT


11             COMPLETE TRANSCRIPT OF JURY TRIAL
              BEFORE THE HONORABLE M. HANNAH LAUCK
12             UNITED STATES DISTRICT COURT JUDGE


13   APPEARANCES:

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                    OFFICIAL COURT REPORTER
25               UNITED STATES DISTRICT COURT
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 1              (The proceeding commenced at 8:01 a.m.)

 2              THE CLERK:  Day 9.  Case Number 3:13 CV 808.

 3    Trustees of Columbia University in the City of New York v.

 4    NortonLifeLock Inc.

 5              Columbia is represented by Garrard Beeney,

 6    Dustin Guzior, Alex Gross, Stephen Elliott, Jessica Ecker,

 7    John Erbach and Dana McDaniel.

 8              Norton is represented by Douglas Lumish, Richard

 9    Lowry, Srinivas Pathmanaban, Susan Tull and Dabney Carr.

10              Are counsel ready to proceed?

11              MR. BEENEY:  Good morning.  Plaintiff is ready.

12    Thank you.

13              MR. LUMISH:  Good morning, Your Honor.  Norton

14    is ready as well.

15              THE COURT:  Good morning.

16              So we should talk about Dr. Jaeger first?

17              MR. BEENEY:  If Your Honor please, Mr. Elliott

18    will present Columbia's argument?

19              MR. ELLIOTT:  Your Honor, may I approach?

20              THE COURT:  Please do.

21              MR. ELLIOTT:  Stephen Elliott representing

22    Columbia, Your Honor.

23              I may be referring to the binder that I

24    understand Mr. Guzior passed to you yesterday.  So as we

25    go through that, I may refer to that.
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 1              Can we ask to turn on the screens?

 2              Your Honor, we object to the group of

 3  demonstratives that are before the Court as an improper

 4  attempt to use Dr. Jaeger's testimony to argue claim

 5  construction to the jury.

 6              At this point, Your Honor has ruled that claim

 7  construction is over.  That any terms that have not yet

 8  been construed will be given their plain and ordinary

 9  meaning.  So in Docket 717 at Page 13, Your Honor said by

10  neither party raising a term as requiring construction

11  during the eight years of litigation, it's clear that they

12  believe these terms may be understood through their

13  ordinary meaning.

14              But I think it's clear from the demonstratives

15  that we have objected to that Dr. Jaeger plans to testify

16  that terms like "in the emulator," terms like "models

17  combining" should be given not their ordinary meaning, but

18  a different and special meaning based on asking the jury

19  to compare those terms to the specification of the patents

20  or to the prosecutor history.  Primarily to the

21  specification of the patents.

22              Norton proposes to Dr. Jaeger to argue that the

23  jury should understand these unconstructed terms in a

24  particular way rather than according to their ordinary

25  meaning, not what the terms generally mean to somebody who
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1 works in the field, or ordinarily means to somebody who

2 works in the field, but rather to limit the terms in some

3 way by comparing those to the embodiments that the

4 invents -- at least some of the embodiments that the

5 inventors chose to include in the specification. And

6 that's claim construction.

7   So let me give you an example. Your Honor

8 refused to exclude the testimony of Dr. Jaeger regarding

9 "in the emulator" limitation and found that he could

10 testify because the Court concludes that the term "in" can

11 be understood according to its ordinary meaning, and does

12 not require further construction. But that's, I think,

13 exactly what Norton is trying to do with Dr. Jaeger.

14   THE COURT: Can you repeat that again?

15   MR. ELLIOTT: I think Your Honor said that

16 Dr. Jaeger could testify regarding the meaning of "in the

17 emulator" because the Court concluded that the term "in"

18 could be understood according to its ordinary meaning, and

19 didn't require further construction. But now they're

20 using these demonstratives to ask the jury to further

21 construe the in the emulator limitation.

22   So in 2014, Norton advocated a construction of

23 emulator that required simulation of a computer system

24 relying on the specification discussion of a virtual

25 processor. And effectively, they argued that the emulator

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 1 limitation required execution of the program in a sandbox,

 2 as Columbia pointed out in the transcript at the time.

 3   But in making that argument, in making the

 4 argument as to what emulator meant, Norton presented the

 5 Court, to Judge Spencer, two portions of the patent

 6 specification, the '115, '322 patent specification, one

 7 stating that the emulator, quote, processes all

 8 instructions inside the area designated for emulation, and

 9 the other that related --

10   THE COURT: You're going really fast.

11   MR. ELLIOTT: I apologize, Your Honor.

12   One stating that the emulator processes all of

13 the instructions inside the area designated for emulation,

14 and the other that related to something called the

15 valgrind emulator.

16   THE COURT: You are going to have to spell that

17 for the record.

18   MR. ELLIOTT: V-A-L-G-R-I-N-D.

19   And at the oral argument, Mr. Hamstra discussed

20 these same two examples in support on Norton's

21 construction, and he used slides that displayed these

22 examples from the specification to support Norton's claim

23 construction.

24   So if we can pull up Slide 57 from the claim

25 construction hearing. This is what was presented at the

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 1  claim construction hearing on the patents.  And this is

 2  the portion that says the -- relates to the emulator

 3  processing all instructions inside the area designated for

 4  emulation.

 5              And if we pull up Slide 61.

 6              THE COURT:  This is from the original?

 7              MR. ELLIOTT:  This is from the original hearing,

 8  Your Honor.

 9              THE COURT:  And do I have this in this notebook?

10              MR. ELLIOTT:  I believe you do, Your Honor.

11  These are the -- and Tab 7 should be the 2014 Markman

12  presentation at the hearing.

13              THE COURT:  Got it.

14              MR. ELLIOTT:  And Mr. Hamstra discussed these

15  examples in the hearing transcript, which is Tab 6 in the

16  binder that you have, at Pages 149, 150, and I believe

17  152.  So they were discussed.

18              And I think it's worth pointing out that it

19  wasn't only the emulator that was at issue.  It was where

20  the execution had to happen.  Whether it had to happen

21  inside these examples of the emulator.  So they were

22  describing both.

23              And Judge Spencer rejected these arguments at

24  the time.  He rejected the reliance on the examples, and

25  he entered the construction that we're all familiar with
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 1   as to what an emulator actually is, software alone, or in

 2   combination with hardware, that permits monitoring and

 3   selective --

 4              THE COURT:  Too fast.  We're not all familiar

 5   with this.

 6              MR. ELLIOTT:  And selective execution.

 7              I apologize.

 8              In any event, so Judge Spencer saw these

 9   examples.  He rejected them.  He entered a claim

10   construction that -- of emulator that Columbia asserted.

11   But now Norton proposes to argue the meaning of "in the

12   emulator" using exactly the same examples.

13              And in fact -- so if we can compare Slide 14 of

14   the objected to slides with Slide 61.  So the left side we

15   have what Norton presented to Judge Spencer, and on the

16   right side we have what they're proposing to present to

17   the jury now, the same portion of the specification.

18              And if we can compare Slide 17 from the objected

19   to slides to Slide 57, we see again it's the same portion

20   of the specification that they're relying to.

21              So what they're proposing to do is basically

22   take the portions of the specification that Judge Spencer

23   looked at and rejected as is -- in construing the meaning

24   of emulator, and now they're proposing to present those

25   same slides to the jury and tell them that those should be
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 1  seen as examples of what in the emulator means.
 2          So the -- and in fact, the slide that we have
 3  here, Slide 17 that we objected to, says exactly that.
 4  They're proposing to present this specification as
 5  examples of what in the emulator means.
 6          So contrary to Your Honor's ruling, there's
 7  nothing here about Dr. Jaeger testifying to the ordinary
 8  meaning of "in," for example.  What they're proposing to
 9  do is basically take the examples that they presented to
10  Judge Spencer the first time around and use those same
11  examples and now present them to the jury.  And we think
12  that that's improper claim construction.
13          Now, in the original slides that we objected to,
14  they even propose to use the sandbox analogy that Judge
15  Spencer saw and rejected.  I think even they think that
16  that's too far, and they've removed those slides now.
17  Those are no longer in the deck.  And so I guess that
18  objection -- portion of the objection has been resolved.
19          So the attempt to use the specification to ask
20  the jury to interpret in the emulator seems, to me, to be
21  a sort of clear attempt at an end run around Judge
22  Spencer's claim construction of emulator.  And that's
23  wrong in and of itself, but there's a broader point to be
24  made here, I think.
25          Norton wants to point the jury to a portion of
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1 the specification to understand the meaning of the terms

2 that have not been construed: In, combining, model.

3 These terms are supposed to be given their ordinary

4 meaning, according to the Court's ruling, and not whatever

5 meaning the jury might glean from the examples that Norton

6 -- the limited examples from the specification that Norton

7 proposes to present to the jury.

8   We wouldn't dispute that an expert can testify

9 to the ordinary meaning of an unconstrued term. And in

10 fact, Dr. Bailey did that in his opening argument. He

11 testified that, you know, people who work in this field

12 look at dictionary definitions, for example, and

13 understood the term "model" to mean something in

14 particular.

15   But you can't argue that the claim should be

16 construed, or to have some kind of a specialized meaning,

17 based on some of the examples that the inventors chose to

18 include in the specification. That is exactly claim

19 construction.

20   So an expert can testify to the ordinary

21 meaning. What he can't testify to is what the

22 construction should be based on the specification.

23   And that's the *Apple v. Samsung* case, 2014

24 Westlaw 660857 at *3. Norton is asking the jury to look to

25 the specification, to understand the meaning of a term

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1 that the Court has already ruled should be given its

2 ordinary meaning.

3   So let me pull up one more example, Slide 36,

4 from the objected to slides.

5   No, this is from the hearing. The objected to

6 slides. Sorry.

7   This is on the creating a combined model

8 limitation from two different models.

9   THE COURT: I'm not sure I have this one in my

10 pack.

11   MR. ELLIOTT: Well, it's the set of objected to

12 slides, Your Honor. And I can -- Your Honor, I do have a

13 copy that Norton's counsel gave me this morning. It's

14 actually -- because they have removed a couple of the

15 slides.

16   Do you have it in front of you?

17   THE COURT: I don't have it.

18   MR. ELLIOTT: May I approach or give it to your

19 deputy?

20   THE COURT: Yes.

21   MR. ELLIOTT: It's Slide 34.

22   THE COURT: Oh, 34. Maybe I do have it.

23   MR. ELLIOTT: Yeah. They have removed a couple

24 of the slides.

25   THE COURT: I was looking for 36. Let me see if

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1 I have it. I still don't think I have it. Maybe I do. I

2 don't see it. So, I've got it now.

3   MR. ELLIOTT: Okay. And so what they're

4 proposing to do here is put up a slide that says what the

5 claims require on one side, and on the other side have a

6 passage from the claim specification. And asking the jury

7 to import some embodiment from the spec into the claims,

8 because that's what the claims require, that's exactly

9 claim construction. That's exactly asking the jury to do

10 claim construction.

11   I should point out that it's bad construction.

12 It's improper construction because it's black letter law

13 that you don't import embodiments from the specification

14 into the claims. But, you know, there may be one reason

15 why they're asking the jury to do that rather than asking

16 the Court to do that at some point over the last eight

17 years. But this slide, in particular, seems to be asking

18 the jury to construe the claims in a particular way.

19   And what they're asking the jury to do is claim

20 construction is for the Court and not for the jury. And

21 it's not proper to ask the jury to do that and to make

22 that that sort of inference in this case. Or I guess more

23 than that, to ask the jury to understand what the claims

24 require in this way.

25   The issue doesn't come up that often I think

1 because it's -- the improperness of it is recognized

2 probably, but I do have a few cases for the point that

3 Norton's experts can't put up a passage from the patent

4 specification and tell the jury that that's what they

5 should understand the claims to mean.

6   And I can provide Your Honor with a set of the

7 cases that I plan to refer to.

8   THE COURT: All right. And does counsel have

9 them?

10   MR. ELLIOTT: I will give them to counsel now.

11   So the first case I wanted to point out was the

12 D&M Holdings case from the District of Delaware. That's

13 2008 -- well, I mentioned, first, that, you know, as I

14 said, we don't dispute that an expert can testify as to

15 the ordinary meaning of the term. What it means to those

16 who work in the field.

17   What he can't testify to is what the inventors

18 may have limited the term in some way to mean. And that's

19 the Apple decision, Apple v. Samsung, from the Northern

20 District of California that's in the packet.

21   But in the D&M Holdings case, which is also in

22 the packet, the Court considered whether or not this kind

23 of testimony amounted to claim construction. The specific

24 quote from Page *1 at 2018 Westlaw 734649, Dr. Almeroth,

25 who is the expert in that case, cites the specification

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 1  and prosecutor history as a basis for his meaning,

 2  referring to previously unconstrued terms.  This is claim

 3  construction.

 4           And in another decision from the same court from

 5  Judge Andrews in the District of Delaware, he addressed

 6  exactly the issue that's before the Court now.  And he

 7  explained that testimony that embodiments in a patent

 8  specification support an expert's opinion regarding the

 9  plain and ordinary meaning of claim terms --

10           THE COURT:  Are you still on the same case?

11           MR. ELLIOTT:  I'm sorry?

12           THE COURT:  Are you still on the same case?

13           MR. ELLIOTT:  No.  I'm sorry.  I moved to the

14  EMC case.

15           THE COURT:  You're going really fast.  You have

16  got to give me more visual clues about where you're going

17  so I can follow you.

18           MR. ELLIOTT:  I apologize, Your Honor.

19           THE COURT:  That's fine.

20           MR. ELLIOTT:  I was talking about the D&M

21  Holdings case a moment ago.

22           THE COURT:  Right.

23           MR. ELLIOTT:  And now I'd like to just mention

24  the EMC v. Pure Storage case, which is also in the packet.

25  And that's another case where exactly the same issue
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1   that's before the Court now came up.

2   And that -- and that was whether the expert in

3   that case could testify regarding using the specification

4   to the plain and ordinary meaning of unconstrued claim

5   terms. And the Court in the *EMC* case explained that,

6   quote, Testimony that embodiments in a patent

7   specification support an expert's opinion regarding the

8   plain and ordinary meaning of claim terms would amount to

9   claim construction and suggests that literal infringement

10   can be established by a comparison between accused

11   products and specification embodiments.

12   And that's at *4 in the *EMC* case, 2016 Westlaw

13   775742.

14   The Court held in that *EMC* case that Pure's

15   experts are therefore precluded from testifying that the

16   specification supports their views regarding the plain and

17   ordinary meaning of claim terms. That's a little bit

18   further on on the page the Court is holding.

19   And case where this issue came up --

20   THE COURT: Wait, please.

21   Where was the earlier quote that you referred

22   to? You said it was on *4, but that's a whole page. So

23   can you tell me what Westlaw page it's on?

24   MR. ELLIOTT: Yes. Hang on one second, Your

25   Honor. Let me just find it in the case. It is -- it's

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 1  about 12 lines down from the beginning at *4.   It's right

 2  before Footnote 5.

 3           THE COURT:   I'm going to ask you to take me back

 4  to the D&M case, and exactly where you were referring to,

 5  please.

 6           MR. ELLIOTT:   Sure.

 7           THE COURT:   You said *1?

 8           MR. ELLIOTT:   Yes, it is at *1.

 9           If you see, there's a Footnote 1 there.

10           THE COURT:   Yes.

11           MR. ELLIOTT:   And it's about eight lines down

12  from there.   Dr. Almeroth cites the specification and

13  prosecution history as providing a basis for his meanings.

14  This is claim construction.

15           THE COURT:   Thank you.   That's very helpful.

16           MR. ELLIOTT:   Just one more case, Your Honor.

17           In the MediaTek case from the Northern District

18  of California, which we also -- which is also in the

19  packet that I gave, that's at 2014 Westlaw 971765 at Pages

20  *4 to *5.   Again, the same issue came up.

21           And the Court explained that arguing claim

22  construction to the jury is inappropriate because it risks

23  confusion and the likelihood that a jury will render a

24  verdict not supported by substantial evidence.

25           And in the MediaTek case, exactly as here, the
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1 defendant wanted its expert, a man named Vahid, to argue

2 the plain and ordinary meaning of terms that had not been

3 construed.

4   And this is a quote from the Court. Vahid

5 relies heavily on the specification to explain and expound

6 upon a specific meaning and/or requirements of terms

7 identified.

8   "At oral argument, Freescale conceded Vahid

9 should be free to use the specification to explain his

10 view on the meaning of particular terms."

11   And these were, again, unconstrued terms.

12   "The Court disagrees. Vahid is not permitted to

13 argue claim construction to the jury, and any testimony in

14 this vein as to any term is and will be excluded."

15   So those are --

16   THE COURT: I'm going to ask you to show me.

17   MR. ELLIOTT: Sure. In the *MediaTek* case, that

18 is --

19   THE COURT: You said four to five.

20   MR. ELLIOTT: Yes.

21   THE COURT: I got the arguing claim construction

22 to the jury is inappropriate. I found that. That's just

23 above *5.

24   MR. ELLIOTT: It's at -- after Footnote 5 on the

25 middle of Page 5, I believe, of what I gave you. It's

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1 about -- it in the paragraph beginning "Second."

2   "Vahid relies heavily on the prosecution

3 history, specifications, and even provisional applications

4 to explain and expound upon a specific meaning and/or

5 requirements of the terms identified. At original

6 argument, Freescale conceded that Vahid should be able to

7 use these documents to explain his view on the meaning of

8 particular terms."

9   THE COURT: Got it.

10   MR. ELLIOTT: "The Court disagrees."

11   So the bottom line here, at least in Columbia's

12 view, is that Norton had eight years to argue to the Court

13 that the unconstrued terms should be construed in a

14 particular way based on its reading of the specification.

15 And with respect to the terms that we're talking about

16 here, the unconstrued terms, it failed to do that.

17   So as Your Honor ruled, these terms should be

18 given their ordinary meaning. And at this point, Norton

19 can't ask the jury to do what it failed to ask the Court

20 to do.

21   And with respect to the in the emulator

22 limitation, I think the problem is compound by the fact

23 that what they're doing is directly contrary to the claim

24 construction of emulator that Judge Spencer entered. And

25 that's been the claim construction pursued by the parties,

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 1 or under which the parties have done all of their

 2 analysis, over the past several years.

 3   And so instead, Norton is asking the jury to

 4 accept the very same arguments about in the emulator that

 5 were rejected by Judge Spencer eight years ago.

 6   THE COURT: All right.

 7   Let me ask have you-all agreed on which slides

 8 are at issue? I'm a little confused by the different

 9 submissions. And if you don't, I'll let you-all decide

10 that.

11   MR. ELLIOTT: Your Honor, this morning, a couple

12 minutes before we walked in, the packet that I gave you,

13 as I understand it, is the slides that we objected to less

14 the slides that Norton has agreed to remove.

15   So I believe -- I haven't had a chance to check

16 it, but I believe that those -- that's the slides that

17 are -- that are now -- Norton is planning to present to

18 Dr. Jaeger.

19   THE COURT: Right. This is all the slides

20 though, you think?

21   MR. ELLIOTT: That are at issue? Let me put

22 together a set for you.

23   THE COURT: Yes. I need to know the set that's

24 really still floating around. Thank you so much.

25   MR. ELLIOTT: Thank you, Your Honor.

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 1              THE COURT:  Okay.
 2              MR. PATHMANABAN:  May I approach, Your Honor?
 3              THE COURT:  Yes.  Could you place your name, and
 4   spell it on the record.
 5              MR. PATHMANABAN:  I will, Your Honor.
 6              Giri Pathmanaban.  That's G-I-R-I.  Last name is
 7   P-A-T-H-M-A-N-A-B-A-N.
 8              Your Honor, I have a binder of materials, if I
 9   can hand it to the deputy?
10              THE COURT:  Please.
11              Thank you.
12              MR. PATHMANABAN:  Good morning, Your Honor.
13              THE COURT:  Good morning.
14              MR. PATHMANABAN:  Your Honor, so let me just say
15   at the outset that Dr. Jaeger is not arguing claim
16   construction to the jury.  What he is intending to do with
17   these slides is simply to provide examples from the
18   specification of operating -- excuse me -- executing a
19   program in an emulator, for example.  What are some of the
20   examples that the specification provides.
21              He is not going to be arguing that those
22   examples are limiting in any way.  And certainly they're
23   free to cross-examine him on that point, and I believe he
24   will testify to that on direct as well.
25              So he's not arguing claim construction at all.
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 1  And they have cited no case, I don't think, where a court
 2  has blanket precluded a technical expert from citing to
 3  the specification of the very patent at issue.  So I'm not
 4  sure -- I think there is a disagreement about what he is
 5  going to be talking about.
 6          He is certainly not going to be talking about,
 7  well, this is the specific way you have to limit what it
 8  means to be in an emulator.  And they're free to
 9  cross-examine him on that point.  So he's just purely
10  providing examples from the specification, Your Honor.
11          Also, much of what I heard this morning was a
12  rehash of Columbia's motion to exclude Dr. Jaeger, which
13  the Court considered and rejected.  So in the binder that
14  I just handed out to you, if you look at the first tab,
15  this is their brief in support of their motion to exclude
16  Dr. Jaeger.  And on Page 33, which I have marked with a
17  blue tab, the argument Columbia made was, "Additionally,
18  Dr. Jaeger should not be permitted to testify that Norton
19  does not meet the "emulator" limitation because program
20  execution in Norton's accused products purportedly does
21  not occur inside an emulator."
22          And they're citing there to, I believe, the same
23  passage of the specification that Dr. Jaeger intends to
24  just show the jury to provide examples of how a program
25  may execute in an emulator.
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 1   And the Court considered these arguments, and in

 2   the next tab the Court rejected Columbia's arguments and

 3   said his arguments with respect to whether the program

 4   executes in an emulator does not run afoul of the Court's

 5   claim construction. And that is an argument for the jury

 6   to decide.

 7   And that's exactly what we're doing here.

 8   So what they're doing is recycling the same

 9   argument they presented to the jury in their *Duabert*

10   motion, and the Court already rejected that argument.

11   Also with respect to the cases they cited, and

12   he acknowledged -- counsel acknowledged that the Court has

13   instructed the jury already that if for terms that are not

14   construed by the Court, they should apply the plain and

15   ordinary meaning. And of course the -- so he is providing

16   examples from the specification of specific terms like

17   what it means for a program to execute an emulator.

18   Counsel also showed you a slide about a combined model

19   versus -- a combined model versus updating a model over

20   time. Again, those are examples that the specification

21   provides.

22   They are free to cross-examine him and make

23   their point to the jury that the claims are not limited to

24   those specific examples.

25   THE COURT: Well, let me ask you this: In the

1   *Daubert* opinion, I didn't cite to the same docket numbers

2   that Columbia did, right? I said that there can be

3   testimony as to in, but I didn't say that -- I didn't

4   reject their claim that those examples were wrong, right?

5   I mean, I don't cite to them here, do I?

6   MR. PATHMANABAN: You don't, Your Honor. And

7   I'm not saying that you did.

8   What I'm saying is they made their argument that

9   the specific passages in the specification that are in the

10   slides support their view that he is now running afoul of

11   the argument that -- of the Court's claim construction of

12   emulator. And that's not what he's doing.

13   So he's just providing examples of, in his view,

14   what -- examples from the specification of executing a

15   program in an emulator. He is not going to argue at all

16   that this -- this requires a sandbox or it requires, you

17   know, SONAR/BASH. He's not even going to say --

18   THE COURT: Well, he's not going to do it

19   anymore because you took the sandbox examples out, right?

20   MR. PATHMANABAN: Well, even if that example was

21   in there, Your Honor, he certainly was not going to argue

22   that the claims are limited to a sandbox. Absolutely not.

23   But, yes, we have taken that off.

24   He's not going to argue that this has anything

25   to do with the emulator. In fact, we're not presenting an

1902

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 1  argument that Norton's -- based on the claim construction,

 2  Norton's BASH product is not an emulator.

 3              THE COURT:  So, sir, are you taking out the

 4  slides that said data -- I can't remember what the slides

 5  were.  I have too many different slides about this.

 6              Submissions are not an emulator, are those still

 7  staying in?

 8              MR. PATHMANABAN:  Submissions, Your Honor, that

 9  may be --

10              THE COURT:  Let me see.

11              MR. PATHMANABAN:  Your Honor, if you have this

12  binder that counsel shared with you?

13              THE COURT:  Well, I have a binder from last

14  night, also.  Let me see.  Must be in this other one.

15  Here we go.  Sorry.

16              MR. PATHMANABAN:  That's okay, Your Honor.

17              THE COURT:  Well, let me ask you this:  So I had

18  a series of slides that suggested that the conclusion

19  should be that BASH submissions are not models.

20              Is there any objection to that?  Are those still

21  going in?

22              MR. PATHMANABAN:  I don't believe there are any

23  objections to those particularly because that's completely

24  a factual issue.  But I'll let counsel speak to that.

25              MR. ELLIOTT:  Your Honor, the slide with respect
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1 to that issue that we had objected to was a slide in the

2 deck that I just gave you that counsel handed me this

3 morning. It was Slide 34. It was the Columbia patent

4 slide that referred to combining models, and used a

5 passage from the specification.

6   THE COURT: All right.

7   MR. ELLIOTT: And that, I believe, is still in

8 the deck. And that, again -- the term "model" is

9 unconstrued. If they want to argue that submissions are

10 not models under the plain and ordinary meaning, we don't

11 object to that. What we do object to is telling the jury

12 that this is the way you should construe the term "model"

13 based on the specification.

14   THE COURT: All right.

15   MR. PATHMANABAN: Your Honor, if I can speak to

16 this slide? Again, this is -- he's going to say examples

17 of -- the specification provides examples of creating a

18 new model from new data, as well as an example of creating

19 a combined model. That's what he's going to say.

20   And there's no dispute that the claim -- it says

21 it requires a combined model. I don't think that's in

22 dispute.

23   THE COURT: So address these -- why can't he

24 just give an example without turning to a patent? It

25 feels like an expert is testifying to what the patent

1904

1 says, right?

2   I mean, he can just -- this suggests some sort

3 of expertise, right?

4   For a plain and ordinary meaning, it is not

5 going to be the case that most people will turn to the

6 patent. They might turn to a dictionary. It feels a

7 little beyond what is normally presented for plain and

8 ordinary meaning evidence. You're going to the patent.

9 You are having an expert go to the patent. You're not

10 having me go to the patent, right? I don't have ordinary

11 skill in the art, anyhow.

12   MR. PATHMANABAN: Respectfully, Your Honor, what

13 I would say is, as helpful as it is for Your Honor to have

14 context about what the patent describes, is helpful for

15 everybody, including the jury.

16   He is not going to be saying that this is the

17 plain and ordinary meaning of a model based on what's on

18 the specification. What he's talking about is here are

19 the examples of what the specification provides.

20   And again, he is --

21   THE COURT: But to what end? He's providing

22 examples to what end? To define a claim?

23   MR. PATHMANABAN: No. It's -- so to -- it's

24 helpful context for all of us to say here are some

25 examples. Here is the examples of training data to train

1905

1   a model versus -- and then the patent also talks about how

2   you can combine models for algorithmically -- in an

3   algorithmic way.   I'm paraphrasing a little bit, is how it

4   puts it.

5   That's all he's going to say about it.

6   And, frankly, Your Honor, if this slide is so

7   problematic we can take it out.   But I don't really see

8   what the issue is there in terms of he's not providing,

9   hey, this is the plain and ordinary meaning of a model,

10 for example.   He's just providing examples of --

11   THE COURT: He's just functionally defining it.

12 I hear what you're saying.   Okay.

13   MR. PATHMANABAN: So, respectfully, Your Honor,

14 I would say much of what they said today was a rehash of

15 their failed claim construction arguments -- excuse me.   I

16 misspoke.

17   Much of what they said was a rehash of what they

18 said in their *Daubert* motion Your Honor already rejected.

19   And Your Honor said that Dr. Jaeger is allowed

20 to testify that the accused products are not executing a

21 program in an emulator.   That's what he's doing.   He is

22 providing examples from the specification.

23   He will testify that it is not limiting the

24 claims.   And he will testify on direct, and certainly they

25 can cross-examine him on that point as well.

1   THE COURT: All right.

2   MR. PATHMANABAN: Thank you, Your Honor.

3   MR. ELLIOTT: Your Honor, I'm happy to respond

4   if you would like?

5   THE COURT: Please.

6   MR. ELLIOTT: I think Your Honor got the point

7   exactly that right now they're saying that what Dr. Jaeger

8   is doing is providing examples to the jury of what these

9   claim limitations mean. He's providing examples to tell

10   the jury that this is the way you should understand in the

11   emulator. This is the way you should understand model.

12   That's really the only reason to provide these

13   examples. And he's inviting the jury to compare the

14   SONAR/BASH product to these examples from the

15   specification rather than asking the jury to compare the

16   SONAR/BASH product to the limitations of the claim given

17   their ordinary meaning.

18   And his argument seems to be that it's okay for

19   them to argue claim construction to the jury because we

20   can cross-examine and we can also argue this claim

21   construction to the jury. And that's just not right.

22   The fundamental principle here is that claim

23   construction is for the Court. It's over. And these

24   claims should be given their ordinary meaning. Not again

25   arguing whether these examples are limiting or not

1907

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 1  limiting in front the jury at this point.
 2            So I think that's what I would say.
 3            THE COURT:  All right.
 4            So before I make any kind of ruling, I want the
 5  exact slides at issue.  I have a full set, and so I'm
 6  happy to take a -- the ones that are objected to I have a
 7  full set.  But maybe I'm just being slow, and I have had a
 8  cup of coffee, but I'll be honest I usually have two, so
 9  maybe I'm a little slow, but I want you-all to agree on
10  what exactly is at issue.
11            And let me see.  I know, sir, you handed me up a
12  notebook.  Is it under one of the tabs?
13            MR. ELLIOTT:  I don't believe so at this point,
14  Your Honor, because, as I said, they changed this morning.
15            Your Honor, if I could get the book, I
16  apologize, that I handed you, back.  We will mark and take
17  out the slides, basically, that are not objected to and
18  make sure that you have a set --
19            THE COURT:  Or just mark the ones that are.
20            And I want you-all to agree on them.  So you can
21  just mark them together.
22            MR. ELLIOTT:  Yes, Your Honor.
23            MR. PATHMANABAN:  Yes, Your Honor.
24            THE COURT:  All right.  So I'm going to
25  contemplate that in the back.
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 1            Obviously, there's another dispute about
 2   Dr. Nielson.  Do we want to talk to that now?  Is he
 3   testifying today?
 4            MR. BEENEY:  We think he'll be testifying this
 5   afternoon 50/50.  So if Your Honor would prefer to address
 6   that later, we may have a better idea as to whether he's
 7   actually going to testify today.  But we can also address
 8   it now.  Whatever the Court pleases.
 9            MR. LUMISH:  I'm not going to address the
10   argument, Your Honor.  But I would be surprised if
11   Dr. Nielson did not start today.  And we don't know how
12   long their crosses of our witnesses will be, but I do know
13   our directs are relatively brief.
14            THE COURT:  All right.  Well, why don't you give
15   me the argument on Dr. Nielson so I'm at least ahead of
16   the game, and then we can go from there.
17            MR. BEENEY:  If Mr. Gross may address, Your
18   Honor?
19            THE COURT:  Of course.
20            MR. GROSS:  May I approach?
21            THE COURT:  Yes.
22            MR. GROSS:  And before I begin, I would like to
23   hand up some materials that I'll be discussing during the
24   argument.
25            THE COURT:  Okay.  I just have to ask if the
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1 other side has a copy?

2   MR. GROSS: I'm providing them with a copy right

3 now.

4   THE COURT: Thank you.

5   Have you stated your name on the record? We

6 have different court reporters, and so aside from the fact

7 that that's a great way to practice anyhow, it certainly

8 is helpful.

9   MR. GROSS: Alexander Gross on behalf of

10 Columbia University.

11   And for the record, what I've handed to Your

12 Honor, and to opposing counsel, is Slide 75 of the

13 demonstratives that Norton disclosed last night for use

14 with its expert, Dr. Seth Nielson, excerpts from

15 Dr. Nielson's expert report, the list of Dr. Nielson's

16 materials considered from his expert report, excerpts from

17 Dr. Michael Bailey's updated opening report. And,

18 finally, excerpts from Dr. Bailey's rebuttal expert

19 report.

20   Your Honor, the second issue to discuss this

21 morning concerns whether Norton's expert, Dr. Nielson, can

22 provide opinions at trial concerning a document that he

23 does not include in his materials considered section, and

24 on which he provides no opinions in his report.

25   Now to put this in context, as Your Honor may

1 recall, last week, on last Thursday and Friday, Dr. Bailey

2 provided his opinions concerning inventorship of the '643

3 patent. Dr. Bailey divided limitations of Claim 1 into

4 three different features, and then provided opinions as to

5 documents corroborating the fact in his opinion that

6 Professors Stolfo and Keromytis conceived of each of those

7 features and, thus, each of the limitations.

8   With respect to the third feature, a portion of

9 Dr. Bailey's opinion was that this third feature was

10 disclosed by the '394 application. Based on the

11 demonstratives that Norton provided last night, and in

12 particular Slide 75, which I have provided to Your Honor,

13 Columbia understands that Dr. Nielson will be providing an

14 opinion that the '394 application does not disclose five

15 limitations of the '643 patent which relate to this third

16 feature.

17   And as you can see on Slide 75, each of those

18 five limitations has a red X over it.

19   Thank you, Mr. Chace.

20   Now, in addition to this Slide 75, there are two

21 other slides in Dr. Nielson's demonstratives. The first

22 merely includes a snippet of the slide from Dr. Bailey's

23 report. And the second is this slide without the red Xs.

24   And I apologize, Your Honor, I don't have a full

25 copy to hand up to you. But this slide is the sum and

1 substance of what we expect Dr. Nielson will be testifying

2 about.

3   Now presumably in addition to testifying that

4 the '394 application does not disclose these five

5 limitations, Dr. Nielson will, at trial, testify about why

6 these limitations are not disclosed based on the two

7 paragraphs that he's put on the left-hand side of

8 Slide 75.

9   Now Columbia objects to Dr. Nielson providing

10 this testimony for two reasons: First, Dr. Nielson does

11 not cite the '394 application in the materials considered

12 section of his report.

13   Second, and more problematically, Dr. Nielson

14 does not provide any opinions concerning whether the '394

15 application fails to disclose these features. And if so,

16 why? As Dr. Nielson has failed to address the '394

17 application in his report, he should not be allowed to do

18 so for the first time from the witness stand.

19   Now as an initial matter, Dr. Nielson does not

20 include the '394 application in his materials considered

21 section, which I've handed up to Your Honor. He does not

22 include a single quotation from, or description of, the

23 '394 application in his report.

24   He does not discuss the content of the '394

25 application anywhere in his report. And he does not

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1 provide a single citation to a single page or paragraph of

2 the '394 application, or identify it by production number,

3 anywhere in his report.

4   Dr. Nielson cannot offer an opinion at trial

5 concerning a document that he did not rely on in forming

6 his opinions and, thus, Dr. Nielson should be precluded

7 from providing testimony concerning the '394 application

8 on this basis alone.

9   However, as I noted a moment ago, the second

10 basis that -- Columbia's second basis for precluding

11 Dr. Nielson from providing testimony about the '394

12 application, in my view, is the more serious of the two.

13   Dr. Nielson does not provide any opinions

14 concerning the '394 application. As I mentioned, he does

15 not opine that it fails to disclose these five limitations

16 listed on Slide 75. And he does not disclose any opinions

17 about why the '394 application may not disclose these

18 limitations.

19   The problem, simply, is that Columbia has no

20 idea what Dr. Nielson will testify to about the '394

21 application. Columbia has had no opportunity to test his

22 new opinion through deposition. And Dr. Bailey has had no

23 opportunity to provide an opinion in rebuttal to whatever

24 Dr. Nielson's new opinion may be.

25   Now, in 2019, Dr. Bailey provided a detailed

1913

1 121-page section on correction of inventorship, which

2 includes numerous discussions of the '394 application.

3   Dr. Bailey quoted from, and discussed, the two

4 paragraphs that you can see on the screen from the '394

5 application. In fact, the second paragraph you can see on

6 the screen he block quoted in his report twice.

7   In response, Norton and Dr. Nielson, made the

8 strategic decision not to address the '394 application and

9 instead to focus on other disclosures and other arguments.

10   Indeed, in his rebuttal report, which was served

11 on November 18th of 2019, and that I believe is the last

12 document I handed up to Your Honor, in Paragraph 230,

13 Dr. Bailey specifically mentioned, and called out for

14 Norton, that Dr. Nielson ignores -- sorry, that

15 Dr. Nielson had ignored the '394 application.

16   In that paragraph, he states that Dr. Bailey --

17 Dr. Bailey states that he had relied on documentary

18 evidence, quote, including the '394 application. And

19 that, quote, Dr. Nielson ignores all of this and fails to

20 address it, end quote.

21   In the intervening two and half years after

22 Dr. Bailey pointed out this deficiency in Dr. Nielson's

23 report, Norton did not seek to supplement Dr. Nielson's

24 report to address this issue, or do anything else to

25 remedy the deficiency in Mr. Nielson's report with respect

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 1  to the '394 application.

 2          The night before he is scheduled to testify is

 3  simply too late for Dr. Nielson to disclose a new opinion.

 4          Now, admittedly, the words "'394 application" do

 5  appear in Dr. Nielson's report once in Paragraph 243.

 6  This paragraph is a long list of materials that Dr. Bailey

 7  considered, and provides no opinions about the '394

 8  application.

 9          During meet and confers last night, Norton

10  argued that there are two sentences in later paragraphs

11  that disclose an opinion concerning the '394 application.

12  But neither of those sentences relate to the '394

13  application in any way.

14          So, first, Norton points to Paragraph 244 of

15  Dr. Nielson's report, which is on Page 91.  And this is

16  the paragraph following the sole paragraph that includes

17  the words "'394 application."

18          And in particular, Norton points to the sentence

19  on Page 91 which states entirely absent from Dr. Bailey's

20  analysis is the second portion of this limitation.

21          And it goes on to quote a portion of the

22  limitation.  And Norton argues --

23          THE COURT:  Wait, wait, wait.  What sentence are

24  you talking about?

25          MR. GROSS:  Sorry.
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1915

 1   Yes, Mr. Chace, that sentence right there.   If

 2 you can zoom in on that, please.

 3   It is this sentence. And this is Paragraph 244,

 4 and the sentence appears on Page 91.

 5   THE COURT: Okay.

 6   MR. GROSS: Now, Norton argues that by stating

 7 that entirely absent from Dr. Bailey's analysis is a

 8 discussion of this limitation, Norton says that's a

 9 disclosure of an opinion that the '394 application does

10 not disclose this limitation.

11   Now this sentence does not discuss the '394

12 application, doesn't mention, it doesn't provide any

13 opinion about why it doesn't disclose this limitation.

14 But I think more importantly, if you look at this

15 paragraph in context, it's talking about an entirely

16 separate family.

17   Now, for context, on May 31st of 2006, Norton

18 filed the '898 provisional application, which is the

19 application that includes the May 14th draft of the

20 NICECAP proposal and the May 22nd proposal.

21   A year later on May 31, 2007, Columbia filed an

22 international application claiming priority of the '898

23 provisional, which is WO2007/14311.

24   And then in May of 2009, the '191 application,

25 with which I presume we are all familiar with at this

1   point, was the national stage entry of that PCT

2   application, that international application.

3   Now if Your Honor looks at what is actually

4   being discussed in Paragraph 244, it's -- this paragraph

5   is discussing that the disclosures in the '898 provisional

6   and the international application, and the claims priority

7   to it, and in the '191 application, had become public.

8   And you can see this by looking at the actual disclosures

9   that are being referenced in this paragraph.

10   Moreover, the sentence immediately following the

11   sentence that Norton has highlighted relates to

12   examination, and the patent examiner's conclusions with

13   respect to the '191 application.

14   Respectfully, this paragraph, and the sentence

15   that Norton has highlighted, are in no way relevant to the

16   '394 application, and instead relate to an entirely

17   separate patent family.

18   Now the second sentence in Dr. Nielson's report

19   that Norton claims discloses an opinion about the '394

20   application is on Page 92 of Dr. Nielson's report. And in

21   particular, Paragraph 247.

22   Mr. Chace, can you just blow that up, just the

23   paragraph and not the block quote underneath.

24   And the sentence that Norton highlighted is the

25   second sentence of this paragraph. None of the

1 publications cited and relied on by Dr. Bailey disclose,

2 and it goes on to quote a limitation from the '643 patent.

3   Now, Norton says that none of the publications

4 cited means that Dr. Nielson was addressing every single

5 publication that Dr. Bailey cited, including the '394

6 application.

7   Norton informed me that this is in response to

8 the specific section of Dr. Bailey's report that includes

9 the discussion of the '394 application, and therefore it's

10 clear that this is addressing that application head-on.

11 But this is the introductory paragraph to a nine-page

12 section which goes on to discuss the specific

13 publications.

14   This section discusses the '191 application at

15 Paragraphs 250 to 251, the May 14, 2006 draft NICECAP

16 proposal at Paragraphs 253 -- sorry, Paragraphs 252 to

17 253, and 260.

18   THE COURT: Those are the NICECAP?

19   MR. GROSS: The May 14th draft of the NICECAP

20 proposal are 250, 253 to 260.

21   And an email between Professors Stolfo and

22 Keromytis, and Norton's Brian Whitten.   And that's at

23 Paragraph 258 to 259.

24   This section also discusses the Symantec decoy

25 server, which is the issue on which Dr. Nielson chose to

1918

1 focus the majority of his report.

2   Not once in the nine-page section does

3 Dr. Nielson mention - mention - the '394 application.

4   In sum, Your Honor, Dr. Nielson has provided no

5 opinion concerning whether the '394 application does or

6 does not disclose the limitations of the '643 patent, and

7 if so, why?

8   And I think this is the crux of the issue, Your

9 Honor, is even if these sentences that we have looked at

10 do in some way disclose an opinion that the '394

11 application does not disclose those specific limitations,

12 that opinion is entirely conclusory, and it will not be

13 helpful to the jury in any way. The jury's task is to

14 determine whether the documentation corroborates

15 Professors Stolfo's and Keromytis's invention and

16 conception of the invention claimed in the '643 patent.

17   And to make that determination, the jury needs

18 to understand why these disclosures that Dr. Bailey was

19 discussing, and that Dr. Nielson will discuss later today,

20 do or do not disclose that invention. And the conclusory

21 statement that, you know, none of the publications that

22 Dr. Bailey cites disclose this limitation, does absolutely

23 nothing to help the jury in deciding the question that

24 they must decide, and therefore, should be excluded under

25 Federal Rule of Evidence 403.

1   Now, finally, Your Honor, based on the meet and

2   confers with Norton last night, Columbia understands that

3   Norton will attempt to cast aspersions at Dr. Bailey's

4   report in an attempt to argue that somehow Dr. Nielson

5   should be able to give these new opinions. Those

6   arguments are entirely irrelevant to whether Dr. Nielson

7   can provide new opinions to the jury that have never

8   before been disclosed.

9   As I explain earlier, Dr. Bailey repeatedly

10 discussed the '394 application in his opening report. He

11 cited it, he quoted it, he even block quoted the key

12 paragraph twice.

13   Columbia disclosed Dr. Bailey's demonstratives

14 last Wednesday, I believe, which contained a slide with

15 the relevant language that you see on the left side of

16 Dr. Nielson's Slide 75, and explaining that that language

17 disclosed the at issue limitations.

18   Norton did not object.

19   Dr. Bailey then provided testimony last Thursday

20 and Friday concerning his inventorship opinions, and the

21 fact that in his opinion, the '394 application discloses

22 this feature. Norton, again, did not object.

23   Norton had the entire weekend with all of

24 Dr. Bailey's testimony concerning correction of

25 inventorship with Dr. Bailey's slides, with Dr. Bailey's

1 reports.   At no point did Norton object to Dr. Bailey

2 providing this opinion.   And at no point during

3 Dr. Bailey's examination did Norton suggest that this

4 opinion was not disclosed in his report.   And so I'm not

5 entirely sure what Norton is going to say.

6   But I did want to put on the record that the

7 argument that there is any issue with Dr. Bailey's report

8 is belied by the record, and is entirely irrelevant to

9 whether Dr. Nielson can provide this brand new opinion.

10   So, finally, as Dr. Nielson has failed to

11 consider the '394 application in forming his opinions, and

12 failed to provide any opinion whatsoever that the '394

13 application failed to disclose the relevant limitations

14 or, more importantly, why that was the case, Dr. Nielson

15 should be precluded from offering this new opinion for the

16 first time in the presence of the jury.

17   Thank you, Your Honor.

18   MR. LOWRY: May I approach, Your Honor?

19   THE COURT: Please approach.

20   MR. LOWRY: Good morning.   My name is Rich Lowry

21 for defendant Norton.   I have a few materials I'd like to

22 pass up, if I could?

23   THE COURT: Sure.

24   MR. LOWRY: We'll be pulling up some slides this

25 morning.

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 1              THE COURT:  Mr. Lowry, I think you're going to

 2  have to pull the microphone closer to you.

 3              MR. LOWRY:  How is that?  Is that better, Your

 4  Honor?

 5              MR. GROSS:  Mr. Lowry, can we have a copy,

 6  please.

 7              MR. LOWRY:  Sure.

 8              MR. GROSS:  Thank you.

 9              MR. LOWRY:  So, Your Honor, I've handed up

10  excerpts of Dr. Bailey's demonstratives, Dr. Nielson's

11  demonstratives, excerpts of the trial transcript, excerpts

12  of Dr. Bailey's updated opening report, and excerpts from

13  Dr. Nielson's rebuttal report.

14              And I'd like to start this morning with looking

15  at, you know, what this issue is really about.

16              Mr. Schmoller, would you pull up Dr. Bailey's

17  demonstratives, please.  Let's go to Slide 20, please.

18              So, Your Honor, what Dr. Bailey did in his live

19  testimony was he took the limitations of the '643 patent

20  and distilled them down to specific concepts.

21              And if we can turn to the next slide, you can

22  see which concepts relate to which claim.  So here is the

23  first feature of the invention.  If we go to the next

24  slide you will see the second feature.  And, importantly,

25  if you go to the next slide, you'll see a third feature,
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1 and this one is the important one.

2   This is why Dr. Bailey points to three

3 limitations, and he relates them to this third feature of

4 the invention of identifying what the attacker is

5 interested in, and continuing the deception.

6   So, you know, counsel had mentioned that we

7 weren't -- we were on notice and we had our slides and we

8 chose not to object, but really if we look at what these

9 slides show -- and I would like to go to Slide 33.

10 There's no way we could have known they were going to

11 point to the third feature regarding those limitations

12 just by viewing this slide.

13   If we go back a couple slides, we'll see that --

14   Go forward one slide please, Mr. Schmoller.

15   THE COURT: You should put the slide numbers on

16 the record.

17   MR. LOWRY: Yes, ma'am.

18   So we are now looking at Slide 31 of

19 Dr. Bailey's demonstratives. And he clearly states in his

20 title that "The Examiner Found the '191 Application

21 Disclosed Generating Very Realistic Bait Data."

22   So at this point, it is very clear in this

23 demonstrative what Dr. Bailey is going to testify about.

24   If we could go back to Slide 33, please, of

25 Dr. Bailey's demonstratives.

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 1              Now this slide just says the disclosure of the

 2   '394 application.  And we had no idea at the time that he

 3   was going to characterize the '394 application as

 4   disclosing the third feature of the claims.

 5              And I'd like to turn to the trial testimony so

 6   we can take a look at exactly what he said.  Page 973 of

 7   the trial testimony transcript at 13 through 18.

 8              And it couldn't be more clear, Your Honor.  He's

 9   asked whether the '349 -- and I think that's an error.

10   It's meant to say '394.

11              "Does the '394 application disclose the third

12   features of the invention that we've been discussing

13   identifying what the attacker is interested in and

14   generating more information -- generating more bait and

15   providing to the attacker?

16              In my opinion, yes."

17              And if you could zoom out, Mr. Schmoller, we can

18   see on Line 21, Mr. Elliott, of opposing counsel, goes

19   ahead and says:

20              "Can you put up Slide 33?"

21              And the testimony goes on at 24 and 25 of that

22   slide.  And Dr. Bailey says on line 25:

23              "I'm pulling up the paragraphs that I think are

24   representative in the '394 application that I believe

25   disclosed that third idea in response to detecting the
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1   bait data via DLP, creating new bait data."

2   So you heard a lot about us not objecting to

3   slides, and we had all this time, but we had no idea that

4   that's what the testimony was going to be on. So I think

5   that's important as we go into our discussion.

6   Now if we look at -- opposing counsel

7   characterized Dr. Nielson's report as having no cites, and

8   the materials considered to the '394 application, but he

9   admitted just a few minutes later that we -- Dr. Nielson

10   cites it in his actual report.

11   If we can go to Paragraph 247 of Mr. Nielson's

12   report. I'm sorry. Paragraph 243 of Dr. Nielson's

13   report.

14   Here -- this is regarding the identifying

15   limitation.

16   And, Mr. Schmoller, can we get just a little bit

17   higher.

18   And so here Dr. Nielson says in his report that

19   Dr. Bailey proceeds to discuss "Professors Stolfo's and

20   Keromytis' public writings and patent applications

21   describing the overall 'properties' or characteristics

22   that will make decoys successful in enticing attackers."

23   Dr. Nielson then goes on to list the different

24   publications that Dr. Bailey discusses. And among those

25   is the '394 application about four lines down from the

1   bottom.

2   So here we have Dr. Nielson opining directly on

3   this application. And he goes on. If you look at the

4   next paragraph, please, and this is on Page 90 of

5   Dr. Nielson's rebuttal report.

6   He makes his first point. Dr. Nielson states

7   that, "each disclosure discussed by Dr. Nielson was made

8   public through Columbia's international publication WO

9   2007/143011 in 2007," and also later on with the '191

10   application.

11   Now, it's important to see that he's not

12   referring just to the provisional that led to the '119

13   application, which is really a publication. He says these

14   disclosures, right? He's referring back to the

15   disclosures of the several publications.

16   Now if we keep going on in this paragraph, you

17   can see on top of Page 91 after discussing -- well, let's

18   start with the top of 91. He says, "the '898 Application,

19   which was publicly accessible in 2007."

20   When he's pointing to content, "the data content

21   of the flow, which may" --

22   THE COURT: You're reading way too fast.

23   MR. LOWRY: Thank you, Your Honor.

24   THE COURT: Happens all the time when you're

25   reading/quoting something.

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 1              MR. LOWRY:  So Dr. Nielson points to a portion
 2  of the '898 application and says this was disclosed in
 3  2007.  And he's referring to it in the sense of here's
 4  some disclosures that were disclosed.  Here is the
 5  material that were disclosed in 2007.
 6              And then he goes on to make another opinion.
 7  This isn't just public.  This is entirely -- the portion
 8  that's entirely absent from Dr. Bailey's analysis
 9  regarding all these disclosures is the incident report,
10  the second half of the limitation.
11              And he's not saying that in regards to just one
12  publication or one disclosure.  He's pointing to all
13  disclosures he pointed to in 243.
14              Now if we can turn to the generating limitation
15  of Dr. Bailey's report.  And this is Paragraph 603.
16              THE COURT:  I need to catch up with you.  All
17  right.
18              MR. LOWRY:  Your Honor, we can see in Paragraph
19  603 that he's talking about Professors Stolfo's and
20  Keromytis' long history researching automatic generation
21  of bait data.
22              And through these Paragraphs 603 and onward
23  through this section, there is numerous publications.  He
24  points to the '394 application at the top of 281, another
25  article in Paragraph 64, an additional article in
```

1 Paragraph 605. And he continues on listing the different

2 applications and other articles they rely on.

3   And you can see at the top of 281, Dr. Bailey

4 specifically points out the '394 application. And I think

5 this is important if you look at Dr. Nielson's rebuttal

6 report next to this, which is rebutting this section, we

7 look at specifically the generating section of

8 Dr. Nielson's rebuttal report. This is at Paragraph 247

9 of Dr. Nielson rebuttal report.

10   And here we can see above Paragraph 247, Your

11 Honor, is the same limitation, right? Dr. Nielson is

12 simply responding to all the arguments in the same

13 section, the corresponding section of Dr. Bailey's report.

14   And in the second line he opens saying, "None of

15 the publication cited and relied on by Dr. Bailey" which

16 would include the '394 application, disclose this

17 limitation.

18   If he stopped there, opposing counsel may have a

19 fair point, but if we read on, if we look at Paragraph 248

20 he again says, "none of the publications discussed by

21 Dr. Bailey recite the generation of additional bait data."

22   And then he says, "As discussed further below,

23 the publications cited and relied on by Dr. Bailey at most

24 describe statically collecting and generating bait data,

25 such as recording network information and generating bait

1 data by alternating the network recording."

2   Here's your why that he said we didn't have. It

3 is right here in Paragraph 248.

4   And if we look two pages later, there is an

5 additional why. Paragraph 254.

6   He says, "In my opinion, nothing relied upon by

7 Dr. Bailey demonstrates that the professors conceived the

8 concept of generating additional bait data in response to

9 a potential security threat interacting with the initial

10 bait data."

11   He says, "The reference Dr. Bailey relies on"

12 which again would include the '394 application, "only use

13 scripted systems of altered network replay."

14   And all we're asking, Your Honor -- and we will

15 show Dr. Nielson's slide shortly. We would just like him

16 to be able to testify within the bounds of his report for

17 the generating and identifying limitations.

18   Now I think we should just pull up Dr. Nielson's

19 slides.

20   Mr. Schmoller, can we go back two slides.

21   So there is three slides that opposing counsel

22 is objecting to. This first one is actually Dr. Bailey's

23 slide. We want to present Dr. Bailey's slide in its full

24 glory. And here it is. And all we'd like to do is have

25 Dr. Nielson respond to it.

1929

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 1              If you look at 73, the next slide.

 2              THE COURT:  Put those slide numbers on the

 3  record, please.

 4              MR. LOWRY:  Yes, Your Honor.  This is Slide 73.

 5              THE COURT:  No, the first one was Dr. Bailey,

 6  Number 33?

 7              MR. LOWRY:  That's correct.

 8              Can we go back, Mr. Schmoller.  I'd just like to

 9  clarify.

10              Dr. Nielson's Slide 72, and it's showing in its

11  full -- in its fulsome, Dr. Bailey's Slide 33 of his

12  demonstratives.

13              Can we go to the next slide, please.  Thank you,

14  Mr. Schmoller.

15              And here all Dr. Nielson plans to do is discuss

16  the material that Dr. Bailey provided, and testified to,

17  regarding that third feature which refers to these

18  highlighted limitations on the right.

19              And there is no intent, Your Honor.  And

20  Dr. Nielson will not go beyond his report, for those

21  limitations specifically for the identifying and

22  generating limitations E, F through 3.  And I'll explain

23  more why I'm leaving out the making imitation.  I will get

24  to that.

25              If we go to the next slide, Mr. Schmoller.
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 1              And Dr. Nielson is simply going to say this

 2  disclosure does not have these limitations for the exact

 3  reasons he said why in his report, right?   The references

 4  relied on by Dr. Bailey only use scripted systems of

 5  altered network replay.   That's Paragraph 254 of

 6  Dr. Nielson's report.

 7              These limitations aren't here generating --

 8              THE COURT:   Wait, wait, wait.   Way, way, way too

 9  fast.   I haven't heard this yet.

10              MR. LOWRY:   I apologize, Your Honor.

11              THE COURT:   So you said for exactly the reason

12  that he identified in this report at Paragraph 254, which

13  is that those -- what does he call them?   References only

14  use scripted systems of altered --

15              MR. LOWRY:   Network reply, Your Honor.

16              THE COURT:   Okay.   Thank you.

17              MR. LOWRY:   And in addition for the same reason

18  disclosed in Paragraph 248 on Page 93 of Dr. Nielson's

19  report, he says, "the publications cited and relied on by

20  Dr. Bailey at most describe statically collecting and

21  generating bait data."

22              So here we have is why he specifically addresses

23  the '394 application referring to Dr. Bailey's section

24  saying none of these publications disclose this element.

25              And I think it's important to see these things
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1 in context in the slides, Your Honor, and the transcript

2 of Dr. Bailey that we just saw.

3   Now I have one last point, Your Honor, regarding

4 the making the additional bait data available to potential

5 security threat.

6   And, Mr. Schmoller, this might be easiest to see

7 on Slide 74 of Dr. Nielson's demonstratives.

8   So, Your Honor, the highlighted limitations,

9 again, are the ones that Dr. Bailey pointed out are

10 disclosed by this disclosure from his demonstratives.

11   And he specifically says that making the

12 additional bait data available to the potential security

13 threat, that limitation is disclosed here. And that's

14 through the third feature that we looked at. He was asked

15 whether or not that the third feature is disclosed in the

16 '394, and he said, yes.

17   Now -- and I'm not sure if counsel said this,

18 but it is true that the '394 is not mentioned in

19 Dr. Nielson's report regarding this limitation - but there

20 is a good reason for that - because it's not mentioned in

21 Dr. Bailey's report regarding this limitation. For the

22 first time it's mentioned at trial during his live

23 testimony.

24   And all we're asking for, Your Honor, is

25 respectfully, a request for the opportunity for

1 Dr. Nielson to respond to these opinions for which we

2 heard for the first time at trial, and which we couldn't

3 glean from their demonstratives. And we would like to

4 reassure the Court that we will stay within the bounds for

5 the identifying and generating limitations within

6 Nielson's report. We'll stay within the writing of his

7 opinions.

8   THE COURT: Wait, wait, wait. You'll do what?

9   MR. LOWRY: We will stay within the bounds of

10 the report of Dr. Nielson's opinions in his report for the

11 identifying and generating limitations. But we would just

12 like to give Dr. Nielson a fair chance to respond to the

13 new argument regarding the making limitation.

14   THE COURT: The making limitation?

15   MR. LOWRY: Yes, Your Honor. This is limitation

16 I on the screen, making the additional bait data available

17 to the potential security threat.

18   THE COURT: So I want to be clear I understand.

19 You're saying that the identifying and generating he had

20 already spoken to, but that the making additional bait

21 data was new, is that your argument?

22   MR. LOWRY: That's correct, Your Honor.

23   THE COURT: All right.

24   MR. LOWRY: Thank you.

25   MR. GROSS: Your Honor, I know we have taken a

1   lot of your time this morning, so I'll try to make this

2   very brief.

3   Now what I heard counsel for Norton to say is we

4   didn't realize Dr. Bailey was going to give this opinion,

5   and all we want to do is have Dr. Nielson respond to

6   Dr. Bailey's opinion. But the time to do that was in 2019

7   when Dr. Nielson submitted his rebuttal report.

8   This is not a new argument. It's clearly

9   disclosed in Dr. Bailey's report. And I think based on

10 the context of the slides, it is fairly disclosed in the

11 slides as well.

12   Now counsel argued that limitation I, making the

13 additional bait data available to the potential security

14 threat, was not disclosed. Sorry. Let me rephrase that.

15   That Dr. Bailey's opinion concerning that

16 limitation being disclosed in the '394 application was not

17 disclosed in his report, but in Paragraph 641 of

18 Dr. Bailey's report he states that this claim element is

19 related to claim element F, which is the generating

20 additional bait data, and E, which is the identifying one

21 or more properties of the initial bait data. And then

22 says that this is a necessary and fundamental part of that

23 technology.

24   And there Dr. Bailey is essentially

25 incorporating by reference what he discussed in those

1 earlier paragraphs, which includes the '394 application.

2   So just in sum, this is a brand-new opinion. It

3 has never been disclosed before. Counsel pointed to a few

4 things in Dr. Nielson's report, but none of those really

5 are relevant to the '394 application.

6   And we just have no idea what he is going to say

7 on the witness stand, and had no opportunity to test that

8 opinion. And for that reason, in Columbia's view,

9 Dr. Nielson should not be allowed to give that opinion.

10   Thank you, Your Honor.

11   THE COURT: All right.

12   Yes, sir.

13   MR. ELLIOTT: Your Honor, with respect to the

14 slides that we were discussing earlier, I have a set of

15 the slides. There are four slides. It's been a bit of a

16 moving target. There are four slides that still remain

17 objected to that they haven't removed. They are flagged

18 in this binder.

19   Can I give that to you?

20   THE COURT: Yes, please.

21   All right. Okay.

22   So, obviously, I'm going to take these under

23 advisement.

24   Dr. Jaeger is the second witness?

25   MR. LUMISH: He is, Your Honor.

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 1              THE COURT:  So regardless of the timing, we'll

 2  have to take a break so that I can issue my decision.  But

 3  we'll just take a few minutes right now, bring the jury in

 4  and we'll hear from Mr. Kane, all right?

 5              MR. LUMISH:  Thank you.

 6                       (Recess taken.)

 7              THE COURT:  All right.  Are we prepared to go

 8  forward?

 9              MR. BEENEY:  Plaintiff is all set, Your Honor.

10              MR. LUMISH:  Norton is ready to proceed, Your

11  Honor.

12              THE COURT:  All right.  We'll bring in the jury.

13              Just so you-all know, we're going to have a

14  switch of court reporters again at about 10:30.  We'll

15  just take a brief moment, but not an actual recess.

16              (Jury is present in the courtroom.)

17              THE COURT:  Good morning, again.

18              JURORS:  Good morning.

19              THE COURT:  We missed it by that much.  Sorry

20  we're closer to 10:00 than 9:30, but we're ready to go.

21              MR. LUMISH:  May I approach, Your Honor?

22              THE COURT:  Please approach.

23              MR. LUMISH:  Thank you.

24              Good morning.

25              Your Honor, Norton calls as its first witnesses
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1   David Kane.

2   THE CLERK: You do solemnly swear that the

3   testimony which you are about to give, in this case,

4   before this Court, shall be the truth, the whole truth,

5   and nothing but the truth, so help you God?

6   MR. KANE: I do.

7   MR. LUMISH: May we hand up exhibits, Your

8   Honor?

9   THE COURT: Please.

10   MR. LUMISH: Thank you, Your Honor.

11   Whereupon, **David Kane**, having been duly

12   sworn in, testifies as follows:

13   **DIRECT EXAMINATION**

14   BY MR. LUMISH:

15   Q   Good morning.

16   A   Good morning.

17   Q   Would you mind introducing yourself to us, please.

18   A   I'm David Kane.

19   Q   And where do you live, sir?

20   A   I live in Los Angeles.

21   Q   Are you a software engineer?

22   A   I am a software engineer.

23   Q   And how did you first get into computers?

24   A   I've been, like, programming for a very long time.

25   My dad got me a Commodore 64 when I was eight, and I

1 taught myself how to program it from the instruction

2 manual.

3 Q   Did you go on to get an education in computer science

4 or computing?

5 A   It was almost forgone. Yes, I went to UCLA and got a

6 bachelor's degree in computer science.

7 Q   Were you going to say something about a foregone

8 conclusion there?

9 A   Yes, pretty much.

10 Q   Where do you work now, sir?

11 A   I work at Broadcom.

12 Q   And can you give us just -- we've heard a little bit

13 about Broadcom, but at a high-level what is Broadcom?

14 A   It is a technology company that makes a lot of chips

15 and hardware, and things, like for phones and computer

16 data centers. And they make a bunch of software products

17 as well for big corporations.

18 Q   And what is your roll at Broadcom?

19 A   I'm a distinguished engineer at this point. And I

20 work in the Symantec Enterprise Division of Broadcom.

21 Q   And what does it mean to be a distinguished engineer?

22 What does the distinguished part of that mean?

23 A   So it's, you know, you gain levels and experience and

24 knowledge of the product in depth. And it's recognition

25 of the knowledge and work I've put into the product.

1 Q   Have you been awarded any patents?

2 A   Yeah. About 12, I think.

3 Q   And when did you join Broadcom, sir?

4 A   I joined Broadcom at the end of 2019.

5 Q   You mentioned you're in the Symantec Enterprise

6 Division. Did you join Broadcom when Broadcom acquired

7 that business from Symantec?

8 A   Yes. Broadcom, when they acquired the Enterprise

9 Security business also acquired the security technologies.

10 Q   And so were you at Symantec then up until that

11 acquisition?

12 A   Yes, I was.

13 Q   When did you first join Symantec?

14 A   I joined Symantec as an intern in 2001 while I was

15 still in college.

16 Q   And what drew you to Symantec other than the obvious,

17 a steady paycheck and benefits?

18 A   Well, my professor at the time was working at

19 Symantec, and he recognized me in class and said you

20 should be an intern. At the time, the Norton brand was

21 very, very cool. And being a computer guy, I recognized

22 Norton on the cover of all the computer books in the late

23 '90s. So it was a really cool company to work for.

24 Q   And so you joined in 2001. Did you stay at Symantec

25 for the rest of your career up until the acquisition in

1   2019?

2   A   Yes.

3   Q   And 18 years at a tech company seems like a fairly

4   long time. What made you stay?

5   A   The technology is great. You know, I work on hard

6   problems. We work in cybersecurity, which is also helping

7   people, doing a good job for people. So, you know, why

8   not stay and develop, you know, the deep knowledge and

9   historical perspective that really helps? The malware

10 repeats itself a lot, so it's helpful to have some

11 perspective, too.

12 Q   What do you mean by it "repeats itself" a lot?

13 A   So the kind of malware attacks that we see are the

14 same ones that we saw 10 years ago, and 10 years before

15 that. You know, everything old is new again. Just the

16 bad guys, you know, use old tricks all the time.

17 Q   Has Symantec been a market leader in sort of the

18 antimalware industry or field while you have been there?

19 A   Oh, yes.

20 Q   Can you give us a brief summary, just at the

21 high-level, of what your roles were at Symantec leading up

22 to your current position?

23 A   Sure. When I started as an intern, you know, I would

24 do work on small projects. We were fixing little bugs,

25 and things like that. And gradually you would design a

1 feature yourself, or design a bigger thing yourself as you

2 gained more responsibility.

3   Ultimately, you know, I end up doing a technical

4 direction for how components interact with each other.

5 You know, big pieces of the product, features that take

6 many years to plan. And so over the years, I've gotten

7 more and more responsibility, you know, for the security

8 of the program.

9 Q   At one point were you referred to -- well, did you

10 started being referred to as the "BASH architect"?

11 A   Yes, I became the architect for BASH.

12 Q   And what does that mean inside Symantec or now

13 Broadcom?

14 A   So kind of a software architect is the one that's

15 putting the big pieces together. You know, maybe not

16 writing the code to do it, but designing and working with

17 the engineers in making a plan that will last a long time

18 that will meet the needs of our customers, or whatever the

19 requirement is. And the architect's job is to kind of

20 oversee and make sure that the technology is going to be

21 durable and work correctly.

22 Q   So have you worked extensively on the BASH or

23 SONAR/BASH technology since it's been around, sir?

24 A   Yes.

25 Q   And not to embarrass you, but is there anybody more

1 knowledgeable about SONAR or SONAR/BASH than you?

2 A   No.

3 Q   Can you give us your description then, please, of

4 what SONAR/BASH is?

5 A   So SONAR/BASH -- or, well, I call it BASH is the

6 component. It's the driver that we put and run on the

7 Windows Operating System. BASH is --

8   THE COURT: So, Mr. Kane, can you pull the base

9 of the microphone any closer to you?

10   MR. KANE: You want it right on my mouth?

11   THE COURT: That's terrific.

12   And try to talk a little slower, if you can.

13   MR. KANE: Sure.

14 A   So I look at BASH as the main component. And it has

15 other detection, protection, information components in it.

16 It runs inside of the Windows Operating System, monitoring

17 events as they happen from whatever event source we can

18 subscribe to.

19   In that is a component, or a detention engine,

20 called SONAR that uses machine learning to make malware or

21 not malware determinations of programs as they run.

22 Q   And have you been working on -- well, let me ask this

23 instead. Withdraw that question.

24   When did you first start working on SONAR/BASH?

25 A   I started on the 1.0 version, the BASH components, in

1 2003 when we first started doing behavior protection.

2 Q   Was there any earlier version of SONAR/BASH that you

3 didn't work on?

4 A   No.

5 Q   So you have been working on it since the beginning?

6 A   Since the very first.

7 Q   To help us understand where SONAR or SONAR/BASH fits

8 into the protection products and technology that Norton

9 has, and now Broadcom, are you familiar with what has been

10 referred to as layers of protection by the company?

11 A   Yes.

12 Q   And have you yourself worked on those layers of

13 protection beyond SONAR/BASH?

14 A   I mean, to my current role, I'm kind of the lead

15 architect across several of the layers of protection that

16 we have.

17 Q   And we have a demonstrative I'd like to bring up.

18   MR. LUMISH: If we could, Mr. Schmoller.

19 BY MR. LUMISH:

20 Q   The jury has seen this already. I was wondering if

21 you could help talk us through a little bit some of the

22 layers here. We have four of them on the screen. And

23 maybe if you can just give your view on what these four

24 layer are at the highest level, sir?

25 A   Yeah. You have intervention is the first step.

1 That's network protection. And antivirus file scan is

2 your -- you know, you're looking the bytes of the file.

3   Representation is something we came up with to

4 leverage our cloud database and our knowledge of the

5 millions of files in the world, whether there is something

6 new or novel or old and well used, or something.

7   And finally, behavior monitoring is the way we

8 can observe programs as they run if the other layers

9 didn't make a determination that something is actually

10 bad.

11 Q   And how did the layers work together to help protect

12 somebody's computer?

13 A   So like the network side is kind of watching your

14 data traffic. Like when you open the files, what site did

15 you go to, what did you download. It is your bank, or it

16 something trying to pretend to be your bank?

17   And so that layer -- you know, the whole

18 Internet is always trying to attack you, so that layer is

19 the one getting the most protection and the most hits. I

20 would call it hits. Detections from those components

21 protecting you at the network level before anything

22 touches your computer.

23   If you happen to download a file from your

24 browser, the antivirus will look at the bytes of the file

25 to see if the file appears to contain malicious code or

1 not.   There is many, many, many engines that are scanning

2 every type of file they can to see if they are malicious.

3 But sometimes it doesn't make that choice, so ultimately

4 the download will look at representation.   Has Symantec

5 seen this file before?   How many people have it on their

6 computers?   Is it very well known?   Is it brand-new?

7   If you are the only person with a particular

8 file on your computer, you probably don't want to have

9 that program on your computer because it is probably

10 malware.   It is not Photoshop, it is not Microsoft.   If

11 it's unique to you, that's a little suspicious.

12   And finally, if you do manage to run that

13 program, a behavior monitor will watch what the program

14 does.   Does it delete all your documents?   Does it send

15 your password off to Russia?   Does it -- you know, does it

16 play a nice little game, but meanwhile it's mining for

17 Bitcoin data in the background, using your CPU and

18 electricity.

19   And all together, that's the primary layers of

20 protection that we have in the product.

21 Q   Where does SONAR/BASH fit in?   In other words, what

22 layer is it in?

23 A   SONAR is under the behavior monitoring component.

24 It's one of a few pieces of the behavior monitoring

25 component BASH.

DIRECT EXAMINATION OF MR. KANE BY MR. LUMISH   1945

1 Q   What other pieces are there of that layer?

2 A   So the other layer at the BASH component of the

3 behavior monitoring layer has a piece called tamper

4 protection because if we -- if malware does run on the

5 computer, the first thing it does is attack the antivirus

6 software, so we had to build tamper protection to protect

7 the antivirus software. So that's one aspect.

8   THE COURT: I'm sorry, what? Tamper protection?

9   MR. KANE: Tamper protection is what it's

10 called.

11 A   And secondly, we have the policy based protection.

12 Whenever we have human written rules that say, hey, this

13 particular action if it is performed on this computer is

14 bad, if a program does this, we know it's bad. We can

15 take care of it appropriately.

16   And of course the subject of SONAR is does the

17 machine learn anything. That it provides machine inferred

18 policies that achieve the same goal of protecting.

19 Q   When it comes to protecting our computers, do you

20 think any of these layers are more important than the

21 others?

22 A   The first layer blocks the most things by far, the

23 network layer, because we are all under attack anytime

24 we're on the Internet.

25 Q   And how about after that?

1 A   The antivirus file scanning layer blocks many, many

2 many, many things, as well as it's tremendously effective.

3 It's kind of the jewel of the product. It's still called

4 Norton Antivirus, even though it's not exclusively

5 antivirus anymore.

6 Q   And down to the fourth layer in SONAR/BASH, do you

7 have a sense of what percentage of threats are blocked by

8 SONAR/BASH?

9 A   Yeah. Ultimately, based on the data that we have,

10 it's probably 1 percent of our detections come from the

11 BASH component.

12 Q   Are you familiar with the notion of something called

13 zero-day attacks?

14 A   Yes.

15 Q   Can you tell us what that means to you, please.

16 A   So in this context, a zero-day attack would be a

17 brand-new piece of malware that, you know, we didn't see

18 before and we didn't have, you know, like a thumbprint

19 signature for already.

20 Q   If you took SONAR/BASH out of these layers of

21 protection in the Norton products, would Norton be unable

22 to stop any zero-day attacks?

23 A   No.

24 Q   How would it stop zero-day attacks without

25 SONAR/BASH?

1 A   So in a particular layer, antivirus scanner doesn't

2 primarily use thumbprints, thumbprint identifiers, to

3 detect malware. There are just too many pieces of malware

4 for each unique thumbprint. So we have what we call

5 heuristics to say, hey, this looks bad. We have portions

6 of malware code. You know, is the malware code hidden

7 somewhere.

8   We have things that attempt to execute a little

9 bit of the program to see if it would reveal malware code

10 inside of the thing. So zero -- you know, brand-new

11 malware we expect every day, and we are ready for at every

12 layer.

13 Q   I'd like to shift gears and direct you to an exhibit

14 that is in your binder. It's PX315. We'll also bring it

15 up on the screen.

16 A   Okay.

17 Q   And I know you've seen it before. Can you tell us

18 what PX315 is, please.

19 A   So this is a planning slide.

20 Q   And how is a planning slide used?

21 A   So this is when we decide -- this is planning for the

22 future we would implement for the next version. This is a

23 concept checkpoint. So this is no code has been written,

24 no designs have been made. This is what we want to do.

25   MR. LUMISH: And can we turn, please, to PX315,

 1 Page 12.

 2 BY MR. LUMISH:

 3 Q   And if you look in the upper right corner there you

 4 will see some text that starts with "We're letting Malware

 5 through." And has been -- this has been discussed

 6 throughout the trial. I wanted to ask you about it, if I

 7 could, sir.

 8 A   Yes.

 9 Q   First of all, it says -- I'm reading the second

10 bullet where it says "Only 85% efficacy (Symantec Internal

11 Testing): 15% is getting through."

12   What is this referring to?

13 A   So this is, you know, if we look -- let me -- I like

14 to actually read the chart.

15 Q   Of course. It's Page 12 of PX315.

16 A   So the bar chart next to those letters is the number

17 of unique malware files we saw each year. And it really

18 exploded in the mid-2000s as the Internet came to be much

19 more used. You had people doing email, you had people

20 browsing, you had people downloading.

21   And so what happened was the malware authors

22 found ways to give every single person who downloaded

23 their malware a unique, but slightly different copy, of

24 the same malware. So the number of files exploded, as

25 this shows, but the number of malware families grew at a

1   fairly normal rate.

2   So what happened was, without a lot of online

3   technology is we did have trouble keeping up with the

4   number of files that were just coming out.

5   Q   It says, "Only 85% efficacy" and "Only" is in bold

6   and italics, and then there's two exclamation points after

7   "15% is getting through." Was Symantec falling behind

8   it's competitors in the security field with these numbers,

9   this 85% efficacy number?

10 A   No. We were still ahead.

11 Q   What do you mean by that?

12 A   So our protection technology is good. It was a bad

13 time for the AV industry. Several of our competitors

14 still only had thumbprint protection. So they would have

15 to keep up with the millions of files that are coming up.

16 We invested in heuristics. Clearly, this slide was to

17 tell everyone we need to invest more.

18 Q   Was Symantec losing business to customers because of

19 this 85 percent efficacy rate?

20 A   Symantec --

21 Q   Withdrawn. I made a mistake in my question. I'm

22 sorry.

23   So the record is clear, I'm going to ask it

24 again. Was Symantec losing business to competitors

25 because of the 85 percent efficacy rate?

1 A   Symantec was not loosing business to competitors

2 because of its efficacy. It was still the best, even at

3 that time.

4 Q   And what did Symantec do to improve this rate?

5 A   So, we -- we focused on it very, very much so. We,

6 again, invested in the file scanning capabilities, added

7 more heuristic capabilities, beefed up the machine

8 learning that's in the file scanning capabilities.

9   We added browse-based protection so we can, you

10 know, watch what you're downloading with your browser. We

11 added a thing that is called true scan in this planned

12 release. And it was the forbearer of what became SONAR,

13 which is at question today.

14 Q   And where did machine learning come in? Were you

15 using machine learning in that effort to improve efficacy?

16 A   It was either the third or fourth iteration of

17 machine learning in the antivirus file scanning engine by

18 this time.

19 Q   Okay. When did machine learning first became a thing

20 at Symantec then?

21 A   So I remember a project from 2002 where one of the

22 engineers was experimenting with an early version called

23 neurelnet. (phonetic)

24 Q   Were there other machine learning technologies at

25 Symantec you can think of, sir?

1 A   Yes. Particularly for the file scanning engine we

2 had the neurelnets. They were very preliminary. We had

3 something called malheur, M-A-L-H-E-U-R. And that lasted

4 a couple of iterations. And then we went to a bigger,

5 more mature, machine learning program called sapient.

6   THE COURT: Called what?

7   MR. KANE: Sapient. S-A-P-I-E-N-T.

8   THE COURT: Thank you.

9 A   We have been very much interested in the domain of

10 machine learning, you know, as it's gotten more mature.

11 It's helped us a lot.

12 Q   If you had these machine learning technologies, and

13 these efforts that you described, why add SONAR/BASH to

14 the functionalities of the technology in 2003?

15 A   In 2003, stuff still gets by. You know, 99 percent

16 efficacy, 99.9 efficacy still means there are things

17 getting by. The behavioral stuff gives us an extra way to

18 observe what malware is doing. Once computers got fast

19 enough that we could run this stuff in the computer, we

20 jumped right on it.

21 Q   Did Symantec get the idea for SONAR/BASH from

22 Columbia University, sir?

23 A   No.

24 Q   Let's turn to another exhibit. This is the last tab

25 in your binder. It's Exhibit PX505. And can you tell us

1 what this exhibit is, please.

2 A   Yes.   This is an internal presentation about the

3 inner-workings of the BASH component.

4 Q   You will see it says Shane Pereira in the lower left

5 corner there, Architect.   Can you tell us who Mr. Pereira

6 was, please, or is?

7 A   Shane was my predecessor as an architect of the BASH

8 component.

9 Q   And then the yellow bar down there it says, "BASH-

10 Culver City - Cutting Edge 2010."   Does that help put a

11 date to this document?

12 A   Yes, that makes sense.   I would have seen this be

13 presented.

14 Q   And what date -- or what approximate date do you

15 understand this document was from?

16 A   This would have been early 2010.

17 Q   If we could turn to Page 7, please.   So PX505,

18 Page 7.   And I was wondering if using this slide you can

19 just walk us through some of the basic functionality of

20 BASH in general terms?

21 A   Yes.   I mean, this is like the crudest representation

22 of BASH, as you can probably see here.   It signs up for

23 events and notifications from the operating system so they

24 can learn what programs are doing.

25   The classification engine will be machine

1 learning, observes and records measures, attributes of a

2 program that runs. So we take its behaviors and its

3 attributes and then we do factor in, to a degree, whether

4 the file was very, very widespread, very good, kind of

5 unknown or suspicious, and that's the reputation.

6   We take kind all three of those things and pass

7 them to the classification engine. Machine learning is

8 basically a black box once we built that tree, and we hope

9 to get a good or a bad disposition out of the rules.

10   MR. LUMISH: Can you turn to Page 17 for me

11 please, Mr. Schmoller.

12 BY MR. LUMISH:

13 Q   And the title here says, "BASH 6.0 - C4.5 Decision

14 Tree." Can you tell us what we're seeing here, sir?

15 A   So this is like a kind of toy diagram of what the

16 real decision tree would be dealing with. You know,

17 connected nodes, leaf decisions up and down the tree.

18 Q   And we've heard about it some, but can you tell us in

19 your words what the SONAR or SONAR/BASH decision tree is?

20 A   Yes. So this is looking at comparisons of attributes

21 to values here. And that's kind of the yellow boxes

22 there, right? The A6, we see its path leads to what looks

23 like a green circle there. That might be some attribute

24 of the file that's good. Like does it have a company name

25 and copyright date in it? That leads to kind of a good

1 determination.

2 Q   Let me interrupt you. Why would that lead to a good

3 determination or might lead to a good determination?

4 A   It may not be a concrete good determination. But

5 this is a slightly good sign that this file is kind of

6 good because malware authors wouldn't put their company

7 name on a copyright into a malware, generally. Some

8 might.

9 Q   All right. So just to make sure we're clear here.

10 We have these yellow rectangles labeled A6, A7, A2, A3.

11 What do those represent?

12 A   So those are decisions where an attribute is compared

13 to a value. So that top one if, you know, contains a

14 company named equals true, is the assessment of that

15 attribute.

16   The next one, if it doesn't contain a company

17 name, we look at the next decision based on A7. If we

18 imagine A7 as it deleted a file from the documents folder,

19 well, that's not necessarily bad in itself, but it's not a

20 good behavior. So you see it kind of leans off to if that

21 comparison is true, if it deleted a file from your

22 computer, that's possibly bad.

23 Q   And we have green and red circles, and it may be

24 obvious from your prior testimony, but can you tell us

25 what those are specifically, the decision tree here in

1 PX505, Page 17?

2 A   Our BASH decision tree outputs are good or bad with

3 kind of a confidence level of how sure it is for the

4 goodness or the badness of the behavior that triggered the

5 execution through the tree. You can see kind of the ones

6 by the top have lower numbers. That might be lower

7 confidence, the one with the copyright date. Doesn't mean

8 it's not malware, but trends towards better.

9   Then we go to the bottom where there's some sign

10 that it's five confidence that this is a very good file.

11   THE COURT: You have to slow down, sir. This

12 not a natural way to communicate, and we haven't heard any

13 of this. Pretend you're talking to people who have never

14 heard it.

15   MR. KANE: Yes.

16 A   So most times a behavior is processed by the tree

17 it's going to end up in that zero, zero box. Not

18 interesting. Doesn't change our opinion of the program.

19 Next.

20 Q   All right. Let's turn to the next page, please,

21 PX505-18, and ask if you can tell us what we're looking at

22 here?

23 A   So this is like a weird snippet of a portion of the

24 BASH scoring tree. This is a source code.

25 Q   And what is source code?

1 A   The source code that kind of represents the machine

2 learning model that we have.

3 Q   And you're able to tell, obviously, better than I

4 could, but are you able to tell from this source code

5 snippet, as you put it, on PX505-18, what the structure is

6 of the scoring tree here?

7 A   Yes. So, I mean, to start with just the shape of the

8 code with that weird angle kind of even lowers the little

9 sample that we saw on the previous slide. When I look at

10 it, and I can read the text on the paper better than the

11 monitor, I see attribute names. And they are weird and

12 internal names. And I see comparisons equals false,

13 equals false. And I see leaf nodes. And those are the

14 long stings at the end that say this is a decision node.

15 Q   Turn the page to PX505.19, please. And what is -- is

16 this slide describing the process of creating the decision

17 tree?

18 A   Yeah. This slide, when we first started making a

19 decision tree, we would have followed this path around.

20 Q   And without asking you to go on too long about it,

21 would you be able to walk us just around some of these

22 circles to give us a sense of how the decision tree is

23 created, sir? And I mean the SONAR/BASH decision tree,

24 for the record.

25 A   Yes. The most important step you do when you make a

1 new machine learning model is choose good attributes.

2 That happens one time, and that is represented by that guy

3 at the top.   What interesting facts about a file or a

4 program might be relevant in determining whether it's

5 malware or not.

6   So attributes.   We assume we picked good ones.

7 We hope we did.

8 Q   So moving one to the right to collect sample, what

9 does that do?

10 A   So Norton Symantec have a database of millions of

11 programs in our storage, good and bad.   This is just

12 saying try to get a good selection of a representative

13 selection of good files, and a good representative

14 selection of bad files just to say, okay, this is kind of

15 the files that we expect our tree to be able to

16 differentiate.

17 Q   And what happens in the next circle there, run

18 samples?

19 A   So the next two are kind of -- I would combine them.

20 We run the sample in order to collect the attributes of

21 the programs.   So that's where from our good programs we

22 expect to collect attributes that represent the good facts

23 about the program, and for our bad files we expect

24 attributes to represent the bad facts about the programs.

25 Q   Then we have the circle at the bottom, "train tree."

1 What does it mean to train the tree?

2 A   So at that point we take our good attributes and our

3 bad attributes from all the samples that we had, and we

4 give it to the machine learning algorithm. And the

5 machine algorithm does its statistical thing, and gives us

6 a model or a tree that we can use.

7 Q   Okay. The next one says, "ship tree in test mode."

8 What does that mean?

9 A   This is an operational step. We want to make sure

10 that the tree, when it's in the world, is detecting what

11 we expect it to correctly because we don't want to ship a

12 disaster. So the way we do that is we put it out there in

13 the world, but it doesn't do any blocking. All it does is

14 give us telemetry of how it's doing.

15 Q   What does telemetry mean?

16 A   So telemetry is when it makes a determination good or

17 bad, we want to send that file, and the information about

18 it, to Symantec so we can evaluate whether that

19 determination was correct or not.

20 Q   Okay. So the next circle there says "evaluate

21 submissions." Is that where you're sending it to

22 Symantec?

23 A   Yes. So the submissions are implied that they would

24 have happened by now, and so we collect them and measure

25 the effectiveness of that tree based on the submissions

1 that we have received over a week or two of having it in

2 quiet mode.

3 Q   And tell us, please, what submissions are.

4 A   The submissions are, you know, we love to collect

5 data. It's the file of the program itself. Of course we

6 want to know the program, and the attributes that we have

7 collected about the program, you know, in the same

8 attributes that the tree would have seen, as well as the

9 leaf node identifier for which part of the tree was

10 responsible for making that determination.

11 Q   And maybe this is in the answers you have given, but

12 tell us, please, specifically how submissions are used in

13 SONAR/BASH.

14 A   So in theory, and in, you know, what used to be the

15 practice, the submissions themselves, and the attributes

16 we submitted, were what we could use to train the next

17 tree that came around next time we publish a tree.

18 Q   Are they currently used for that purpose, the

19 submissions?

20 A   They're not used for training the tree.

21 Q   Then are they used for anything now, the submissions,

22 I mean?

23 A   The files themselves are still very valuable. The

24 attributes not so much. But we love to collect data. We

25 want to see every file in the world. So, yeah, we still

1 take every file we can get.

2 Q   In a technical sense here do you consider these

3 SONAR/BASH submissions to be models of any kind?

4 A   No.

5 Q   Why not?

6 A   The submission is facts about the program, the

7 attributes that we measured. The decision tree is the

8 model.

9 Q   In all of the years that you have been working on

10 SONAR/BASH, have you ever seen any evidence in terms of a

11 document, or anything like, that Norton or Broadcom has

12 referred to submissions as models?

13 A   No.

14 Q   Have you ever heard them refer to as submission

15 models by that label?

16 A   No.

17 Q   Have you ever seen any evidence, or heard anybody

18 ever say, that submissions are models that are used to

19 predict whether a function call is going to be valid or

20 malicious?

21 A   No.

22   MR. LUMISH: Let's go to Page 15, if we could

23 please, Mr. Schmoller.

24 BY MR. LUMISH:

25 Q   Can you tell us what we're looking at here, sir?

1   MR. LUMISH: And for the record, it's the slide

2   titled "BASH 6.0 Scoring Algorithm," and it goes on from

3   there.

4   A   So this could be in the context of a submission

5   representative of what we would send to Symantec as the

6   submission, where if a good sample was detected or a bad

7   sample was detected, we would send the sample, of course,

8   as well as the same exact attributes about the sample,

9   whether it was good or bad. We're measuring the same

10   things, and so we send the facts about the file up along

11   with the sample at the submission time.

12   Q   Are the attributes different whether it's good or a

13   bad sample or a good or malicious sample?

14   A   No. As the diagram shows, we measure the same

15   attributes for every program and submit, you know,

16   whatever we have collected up to that point.

17   Q   Okay. I'm going to ask you to go to another document

18   for me, please. It's in your binder as PX398.

19   MR. LUMISH: And, Mr. Schmoller, if you can

20   bring that up for me, please.

21   BY MR. LUMISH:

22   Q   Can you tell us what PX398 is, please, sir.

23   A   So this is an internal document for the BASH content

24   team.

25   Q   How would this document be used at Symantec at the

1 time?

2 A   So there's a team that develops the content for BASH,

3 the decision tree training, of course, and the other

4 policy content. So they have their own list of work that

5 they need to do. That's kind of what is in this document.

6 Q   All right. There's a section right about midpoint

7 there that begins "terms and terminologies."

8 A   Yes.

9 Q   And I wanted to ask you about two of the terms that

10 are there. Number one says "Tree: Short for decision

11 tree," and it goes on from there. Is this a description

12 or a definition of the SONAR/BASH decision tree?

13 A   Yeah. This is the description for someone who had no

14 idea what the SONAR tree would be. When someone says a

15 tree, that's what we're referring to.

16 Q   The second sentence says, "The primary output of this

17 team." What do you take that to mean?

18 A   So, as I said, this is the content team. So they are

19 responsible for building the content that goes to the BASH

20 component, that being, in this case, the tree. But also

21 the policy rules and the other data that gets sent.

22 Q   I'm going to skip a sentence and go to the one that

23 starts at the end of that first line. It says, "The

24 general method is that data (attributes) of known examples

25 of the classes to be categorized are analyzed and a model

1 is created (the tree) which can then be used to classify

2 unknown examples."

3   Do you see that sentence, sir?

4 A   Yep.

5 Q   So the sentence I just read expressly refers to the

6 tree as a model. Do you see that?

7 A   Yes.

8 Q   And do you think that is an accurate description of

9 the SONAR/BASH decision tree, is it a model?

10 A   Yes.

11 Q   Why would you say it's a model?

12 A   The tree is a model. It's a predictor. And like the

13 sentence says, it makes a decision for unknown files based

14 on training that we gave it for known files.

15 Q   And if you need to read anything else, please do, but

16 I know you've looked at this document to be ready today.

17 Is there anything in this description that describes the

18 SONAR/BASH decision tree as a combined model?

19 A   No.

20 Q   Have you ever seen any document in all of your work

21 on SONAR/BASH that has ever referred to the SONAR/BASH

22 decision tree as a combined model?

23 A   No.

24 Q   Let's go down to Paragraph 5 where it has an entry

25 for submission. Is this a definition or description of

1 the SONAR/BASH submissions you have testified about this

2 morning?

3 A   Yes.

4 Q   And how does it describe those submissions?

5 A   It says it's a "package of data sent to us from the

6 BASH client." Implying it was on a computer somewhere.

7 "It contains information about a sample and that data is

8 used to train new classifiers and to evaluate the

9 performance of the existing classifier" in the world. "A

10 submission may contain a copy of the Sample," if we don't

11 already have one on our servers. "Information about the

12 BASH client version" and tree version. "It also contains

13 the Static Attributes" and the dynamic attributes, which

14 would be the events of -- that were reported on the

15 client.

16 Q   Does this exhibit, PX398, describe submissions,

17 SONAR/BASH submissions, particularly as models?

18 A   It does not.

19 Q   And I want to ask you when they're made. Are

20 SONAR/BASH submissions created before or after a decision

21 tree has been analyzed -- I'm sorry. Withdraw. I made a

22 mistake.

23   Do the submissions get created before or after a

24 function call has been analyzed by the SONAR/BASH decision

25 tree and declared valid or malicious?

```
 1  A     No, the sample is created after the decision tree has

 2  made a determination.

 3  Q     And do the submissions, the SONAR/BASH submissions,

 4  have decision trees in them?

 5  A     No.

 6  Q     If not full trees, do the SONAR/BASH submissions have

 7  the paths the function call took in the tree?

 8  A     No.

 9  Q     Do the SONAR/BASH submissions have any part of a

10  decision tree in them?

11  A     They contain the identifier of the leaf node so that

12  we know which decision ultimately did it.

13  Q     And could you tell --

14          THE COURT:  I'm sorry.  Can you say that again.

15  I didn't hear it.

16          MR. KANE:  They contain the identifier of the

17  leaf node, the determining node in the tree.

18          THE COURT:  Okay.

19  BY MR. LUMISH:

20  Q     What other data is included in a SONAR/BASH

21  submission?

22  A     So in addition to that leaf node, it's the file

23  itself possibly, and the attributes that we had measured

24  up to that point while observing the program run.

25  Q     If you had no other data but the data that's in a
```

1 SONAR/BASH submission, would you be able to determine what

2 function call had been analyzed to create that submission?

3 A   Probably not.

4 Q   And why not?

5 A   The leaf node identifier is not useful in and of

6 itself.

7 Q   What do you mean by that?

8 A   I would need the tree with me next to it to see what

9 the path was, and that's not part of the submission.

10 Q   Are SONAR/BASH submissions ever compared themselves

11 to function calls?

12 A   No.

13 Q   You said that in the past the SONAR/BASH submissions

14 could be used to train decision trees. When that

15 happened, was it ever the case that two or more

16 submissions would be taken and combined with each other to

17 train that tree?

18 A   No, we wouldn't do that.

19 Q   Why not?

20 A   The decision -- the submissions are, you know, that

21 package of data, and they belong to that sample

22 exclusively. If, you know, we get to that training step

23 that collects samples, what we really want is the

24 attributes of the samples, obviously. So we collect

25 attributes from submissions and use the attributes to

1   train the tree.

2   Q   Well, if the submissions aren't combined with each

3   other to train the tree, how are those SONAR/BASH

4   submissions used to train the tree?

5   A   Yeah. As I said, the attributes from the

6   submissions, good or bad. And after they've evaluated

7   that they're correct, then we can take the attributes

8   equally out of the submission for the good and the bad,

9   and provide them to the machine learning algorithm to

10 produce a new tree.

11   MR. LUMISH: You can take that down.

12 BY MR. LUMISH:

13 Q   I want to ask you about some testimony --

14   THE COURT: I'm sorry. We've hit the moment

15 where I want our court reporters to have an opportunity to

16 switch out. Sorry to interrupt you.

17   MR. LUMISH: Not at all.

18   THE COURT: This will just take a second.

19   (The trial resumes on the next page.)

20

21

22

23

24

25

David Kane - Direct   1968

 1   THE COURT: My apologies for interrupting.

 2   MR. LUMISH: Not at all. Thank you, Your Honor.

 3 BY MR. LUMISH:

 4 Q   By the way, you have water, if you'd like it, next to

 5 you.

 6 A   Oh, yeah. Thanks.

 7 Q   Please feel free to help yourself.

 8 A   I'm okay for now.

 9 Q   I'd like to show you, sir, some testimony that the

10 jury heard earlier this week from your predecessor,

11 Mr. Pereira, and ask you a few questions about it, if I

12 might.

13 A   Okay.

14   MR. LUMISH: Mr. Schmoller, will you bring up,

15 please, the testimony from page 251, lines 18 through 25.

16   And, Your Honor, we're cutting out the

17 objections, but if you'd prefer we show those, we can do

18 that.

19   MR. GUZIOR: Your Honor, we have an objection to

20 this on foundational grounds. I think my colleague is

21 about to ask the witness what another person meant, and

22 it's unclear how Mr. Kane could know that.

23   MR. LUMISH: I'm not. Actually, I'm just going

24 to ask if he things it's technically accurate and if yes

25 or no, to explain himself.

David Kane - Direct   1969

1 │   THE COURT: All right. That's fine.

2 │ BY MR. LUMISH:

3 │ Q   All right, sir. So on the screen, we have

4 │ Mr. Pereira's testimony from page 250, lines 18 through

5 │ 25.

6 │   And the question was, "And the models of

7 │ behavior and attributes that the decision tree includes is

8 │ models of what you describe as known good and known bad,

9 │ correct?"

10 │   And Mr. Pereira, says, "Right, it's a

11 │ combination of the models of known good and known bad."

12 │   Do you, sir, think that the decision tree in

13 │ SONAR/BASH is a combination of models of known good or

14 │ known bad?

15 │ A   I don't think so.

16 │ Q   And why not?

17 │ A   Because the SONAR decision tree is not a combination

18 │ of models.

19 │ Q   Given your knowledge of SONAR/BASH, is there any way

20 │ for you to look at this testimony and try to harmonize it

21 │ with what you believe SONAR/BASH does do?

22 │ A   Like we just talked about, it's a combination of good

23 │ and bad attributes that yield our model.

24 │ Q   And are those attributes models, in your view?

25 │ A   No.

David Kane - Direct

1 Q   Technical view, I mean.

2 A   They're facts.

3 Q   Can you think of any evidence, any document, any --

4 other than what I've shown you on the screen here, any

5 person who's ever called the attributes of SONAR/BASH

6 models?

7 A   Aside from accidentally saying it here, I don't think

8 so.

9 Q   Well, let me show you the next piece of testimony. I

10 think it's the next question and answer from page 252,

11 lines 2 through 13. And this is fairly lengthy, so I'll

12 read it for you.

13   The question was, "And why do you combine the

14 models of known good and known bad when constructing the

15 decision tree?"

16   And the answer was, "Because we want to have, on

17 one side, influence or affect the other side of that -- of

18 that equation. In other words, the -- if a particular

19 combination of attributes is in high quantities of -- just

20 for the goodware buckets, we don't want one that reflected

21 in the trees such that it doesn't create a malicious

22 branch that uses the exact same combination, because that

23 would result in a lot of false positives."

24   So that was long and complicated, but do you see

25 anything in that that you think is accurate about the way

David Kane - Direct   1971

1 SONAR/BASH decision trees, in fact, were?

2 A   I mean, this is a very tortured answer that he gave,

3 but I think it is correct. We chose to make a single tree

4 that can itself determine good and bad rather than have

5 two separate trees to determine good and bad, because if

6 both had the determination good and bad simultaneously, we

7 wouldn't know what to do.

8 Q   Mr. Pereira references here a particular combination

9 of attributes. Do you see that testimony, sir?

10 A   Yeah.

11 Q   And does the decision tree in SONAR/BASH use a

12 combination of attributes to get trained or developed?

13 A   It uses -- well, it uses sets of attributes. So we

14 give it good and bad expectations for what we want from

15 it, and it trains a tree -- it trains a single tree from

16 the two sets of data that we give it.

17 Q   Does that make it a combined tree, in your technical

18 view?

19 A   No.

20 Q   And let's look at the next question. So we're on 252

21 still. We're going to go just down to the next line and

22 following. So page 252, lines 14 through 24 of

23 Mr. Pereira's testimony.

24   And he was asked, "QUESTION: In other words,

25 the way I look at it is that it's not just enough to ask

David Kane - Direct   1972

 1 will good programs do X and/or to ask separately bad

 2 programs do Y, it's by combining an understanding of both

 3 that you're able to create the most robust model that you

 4 can?"

 5   And Mr. Pereira answered, "That is my

 6 understanding, yes.

 7   So how about this testimony? Does this, in your

 8 mind, comport with how you understand SONAR/BASH decision

 9 trees to work?

10 A   The understanding of the good and bad attributes in

11 the single tree gives us the best result for protection,

12 yeah.

13 Q   Does this mean the SONAR/BASH decision tree is a

14 combined model, in your technical view, sir?

15 A   No.

16 Q   Does SONAR/BASH or -- does it now or has it ever had

17 one decision tree that was only for good function calls or

18 valid function calls?

19 A   No.

20 Q   And the opposite question. Does SONAR/BASH now or

21 ever in the past have a single decision tree that is only

22 for bad or malicious function calls?

23 A   No. As I said, we wouldn't know how to reconcile the

24 results if both trees gave a result.

25 Q   And so forgive me if this is a dumb question, but

David Kane - Direct   1973

1   then is there ever now -- withdraw.

2   Is there now or has there ever been a tree --

3   decision tree in SONAR/BASH that was made by combining an

4   all good or valid decision tree with an all bad or

5   malicious decision tree?

6   A   No.

7   MR. LUMISH: Okay. Can you take that down,

8   please, Mr. Schmoller?

9   BY MR. LUMISH:

10 Q   Back to submissions, if I could, please, sir, for a

11 second.

12 A   Uh-huh.

13 Q   Does Broadcom, or previously Norton/Symantec, store

14 the submissions?

15 A   Yes.

16 Q   And can you tell us why?

17 A   We build these databases of files, you know, one, for

18 reputation; two, for detecting new threats by finding

19 commonalities of files; three, I mean, well, aside from

20 training the tree, we also use the submissions to prevent

21 false positives in the future where if we get good files,

22 we want to make sure we never detect those files as we

23 push out new detection technologies. So we keep -- oh,

24 and we want to keep detecting old malware forever too.

25 Q   And where do the submissions come from? When they're

David Kane - Direct   1974

1 sent to the server at Broadcom now and previously at

2 Norton or Symantec, where are they coming from?

3 A   They come from customers' computers.

4 Q   Do those customers' computers ever send submissions

5 to other customers' computers?

6 A   No.

7 Q   When was the last time the SONAR/BASH decision tree

8 was updated?

9 A   2017.

10 Q   And so when there would be a tree update, a

11 SONAR/BASH decision tree update, would it get pushed out

12 or propagated to the customer computers?

13 A   Yeah. As we saw in that circular diagram, it would

14 have gone out in test mode and then been enabled if its

15 performance was adequate.

16 Q   And when that would happen, when the tree would get

17 pushed out, would it include any sort of a report

18 identifying any function calls that had been previously

19 classified as malicious or bad by SONAR/BASH?

20 A   No.

21 Q   More broadly, then, sir, are you aware of any kind of

22 report that is ever sent by SONAR/BASH to other computers

23 that are running SONAR/BASH to tell them this is a

24 malicious function call?

25 A   No.

David Kane - Direct   1975

1 Q   When the decision trees were pushed back out to

2 customers, did they ever include also with them

3 submissions?

4 A   No.   That's not the direction that submissions go.

5 Q   Does the Norton, or Broadcom now, server ever send

6 submissions out -- withdraw.   Let me ask a setup for that.

7   You've described the submissions being stored by

8 that server.   My question now is do they ever get sent

9 out?   So does the Norton or Broadcom SONAR/BASH server

10 ever push submissions off to Norton customers at all?

11 A   No.

12 Q   Is Broadcom planning to update the decision tree

13 anytime soon, sir?

14 A   No.

15   MR. LUMISH: Thank you.   Your Honor, I pass the

16 witness.

17   THE COURT: All right.

18   MR. LUMISH: Thank you for answering my

19 questions, sir.

20   THE COURT: Do you have a sense of how long your

21 cross will take?

22   MR. GUZIOR: Probably an hour and 20 minutes.

23   THE COURT: So we're going to take a break

24 within it.   I just want you to know that.

25   MR. GUZIOR: Yeah.   If Your Honor wants to take

1976

1 a break now, I may need a couple minutes to get the

2 binders distributed.

3   THE COURT: Well, why don't we do that. So we

4 will take a break until 11:00.

5   MR. GUZIOR: Thank you, Your Honor.

6   (The jury exited the courtroom.)

7   THE COURT: I'll tell you, as I have to, you'll

8 remain under oath, and I'll say it again in front of the

9 jury when we come back.

10   THE WITNESS: Sure.

11   THE COURT: Okay. We'll take a recess.

12   (Recess from 10:45 a.m. until 11:03 a.m.)

13   THE COURT: Are we prepared to go forward?

14   MR. LUMISH: Your Honor, may I make one

15 objection before we proceed?

16   THE COURT: Yes.

17   MR. LUMISH: We were just handed demonstratives

18 right now for the cross. Your Honor's order yesterday

19 instructed us to disclose all demonstratives the night

20 before. We just got these now. We object on that ground.

21   THE COURT: I did order that.

22   MR. GUZIOR: Your Honor, I'm going to hand draw

23 them. I just gave them as a courtesy to them so that they

24 would see that I'm going to hand draw. It's something

25 that I decided to do on the fly this morning.

1977

1   And also, if we were to give that to the other

2 side, the witness would have to be sequestered as of the

3 time we share it.

4   THE COURT: I'm sorry?

5   MR. GUZIOR: If we were to disclose what I might

6 hand draw ahead of time, the witness would have to be

7 sequestered when we share it. Otherwise, they would

8 prepare the witness on the cross-examination.

9   MR. LUMISH: And we have an agreement,

10 Your Honor, that until the first cross question is asked,

11 the witness is not sequestered.

12   MR. GUZIOR: But with the new rule of sharing

13 cross demonstratives ahead of time, the witness couldn't

14 be prepared on the demonstratives. Otherwise the witness

15 would be prepared on the cross-examination.

16   Your Honor, I'll make it easy. I'm not going to

17 use what I shared with Mr. Lumish. I may do some

18 handwriting on the ELMO if it's consistent with the

19 witness' testimony, but I'll make it easy and I'm not

20 going to use the demos that I just handed to Mr. Lumish.

21   THE COURT: All right. That's -- if he's not

22 going to use them, he's not going to use them.

23   MR. LUMISH: Thank you, Your Honor.

24   THE COURT: I am going to say, there's some

25 inconsistency with disclosing demonstratives on cross,

1978

1 and --

2   MR. BEENEY: Your Honor, I did want to take just

3 a couple minutes to address that issue -- not with respect

4 to this witness -- at some point today, whenever it's

5 convenient, but I did want to address that sentence in

6 Your Honor's order at some point today if we could.

7 Whenever Your Honor would like.

8   THE COURT: Well, I think I have to say that

9 you're not obligated to disclose your demonstratives

10 before cross. You all wouldn't do -- I wouldn't make you

11 do any of that.

12   MR. MORIN: We understand, Your Honor.

13   THE COURT: Okay. So my apologies for the lack

14 of clarity.

15   MR. GUZIOR: Your Honor, I should have clarified

16 yesterday. We sort of realized it late in the day.

17   THE COURT: All right. That's fine.

18   Okay. We're ready for the jury.

19   Trying to figure out what I have on my desk.

20   MR. GUZIOR: Those are the cross-examination

21 materials, Your Honor, which I gave to your clerk at the

22 break.

23   THE COURT: Okay.

24   (The jury entered the courtroom.)

25   THE COURT: All right.

David Kane – Cross   1979

1   MR. GUZIOR: May I proceed, Your Honor?

2   THE COURT: Yes, please.

3   Everybody ready?

4   Okay. Mr. Kane, you're still under oath.

5   THE WITNESS: Yes.

6   **CROSS-EXAMINATION**

7 BY MR. GUZIOR:

8 Q   Good morning, Mr. Kane. Thank you for making the

9 trip.

10 A   Good morning.

11 Q   You flew here from California, right?

12 A   Yes.

13 Q   For how long have you lived in California?

14 A   I was born in California.

15 Q   And you've lived there your whole life?

16 A   Yes.

17 Q   You do not work at the defendant NortonLifeLock,

18 correct?

19 A   No, I don't.

20 Q   Today I think you told us you work for a company

21 called Broadcom; is that right?

22 A   Yes.

23 Q   You have worked at Broadcom for more than two years,

24 right?

25 A   Yes.

David Kane – Cross   1980

1 Q   So during your testimony, when you use the word "we,"

2 who are you referring to?

3 A   If we're talking about anything in the last two

4 years, that would be Broadcom.

5 Q   So you were not referring to the defendant

6 NortonLifeLock?

7 A   If it's since late 2019, it would be Broadcom.

8 Q   And you started working at Broadcom at the end of

9 2019 because of a mergers and acquisitions, or M&A,

10 transaction; is that right?

11 A   Yes.

12 Q   In that M&A transaction the defendant, Symantec, sold

13 its enterprise business to Broadcom for more than

14 $10 billion, right?

15 A   Yes.

16 Q   The Symantec name was sold to Broadcom as part of

17 that M&A transaction?

18 A   Yes.

19 Q   And you transferred to Broadcom, along with thousands

20 of other employees, as part of that transaction, right?

21 A   Perhaps not thousands. But yes, many, many

22 employees.

23 Q   After the transaction, the defendant in this case

24 changed its name to NortonLifeLock, right?

25 A   Correct.

David Kane - Cross   1981

1 Q   I want to show you a couple of slides from Norton's

2 opening statement about NortonLifeLock. And you have a

3 copy of the opening statement presentations in front of

4 you, Mr. Kane.

5   MR. GUZIOR: Mr. Chase, can you please pull up

6 slide 3 from Norton's opening statement?

7 BY MR. GUZIOR:

8 Q   It's also on the screen, Mr. Kane.

9   During opening statements, Norton's lawyer told

10 the jury that NortonLifeLock has only 2700 employees. You

11 yourself are not one of those 2700 employees, right?

12 A   I would infer, since it says to today, then yes, I am

13 not one of that 2700.

14 Q   But before the M&A transaction, you were a Symantec

15 employee, right?

16 A   Yes.

17 Q   And in 2019 Symantec, the company sued in this case,

18 employed more than 12,000 people, give or take, right?

19 A   That number sounds reasonable.

20 Q   Right before the M&A transaction, Symantec laid off

21 nearly 1000 employees, right?

22 A   That's not my knowledge. I don't know.

23 Q   Well, could I ask you to take a look in your

24 binder --

25   MR. GUZIOR: And, Mr. Chase, we're not going to

David Kane - Cross   1982

 1 publish this.

 2 BY MR. GUZIOR:

 3 Q   I just want to see if I can refresh your

 4 recollection, Mr. Kane.

 5 A   I'm not privy to hiring or firing choices of Norton.

 6 Q   I just want to see if these news articles will help

 7 refresh your memory.

 8 A   Sure.

 9 Q   Can you take a look, please, at the tab Article 1 in

10 your cross-examination binder, sir?

11 A   Okay.

12 Q   Take a moment to review that, please.

13 A   Okay.

14 Q   Now, did that refresh your recollection, Mr. Kane,

15 that right before the M&A transaction Symantec laid off

16 nearly 1000 employees?

17 A   This article says a couple hundred, but it could have

18 been more than that across the globe.

19 Q   I see. And I think you told us a moment ago that as

20 part of that M&A transaction, many, many employees

21 transferred from the defendant Symantec to Broadcom,

22 right?

23 A   Yes.

24 Q   Now, your current employer, Broadcom, is a large

25 corporate group that employs something like more than

David Kane - Cross   1983

1   20,000 people around the world, right?

2   A   That sounds right.

3   Q   Okay. Now, I want to show you slide 2 from Norton's

4   opening statement. As far as you know, Mr. Kane, Peter

5   Norton is not the CEO of NortonLifeLock, right?

6   A   He has not been for a very long time.

7   Q   You're getting ahead of me, sir. In fact, Mr. Norton

8   sold his business to Symantec around 1990, right?

9   A   I'm not sure of the date, but it was before I

10 started.

11 Q   And you started in 2001, right?

12 A   Correct.

13 Q   And Mr. Norton sold his company to Symantec before

14 you started in 2001?

15 A   Yes.

16 Q   As far as you know, does Mr. Norton have any

17 affiliation with either NortonLifeLock or Broadcom today?

18 A   I think he receives a royalty for his name being in

19 Norton, but that's the only affiliation I'm aware of.

20 Q   You've never had lunch with Mr. Norton, have you?

21 A   He had his artwork in the office for a while, but

22 that was about it.

23 Q   Have you ever met him?

24 A   No.

25 Q   I see. I think you told us today that there's a

David Kane - Cross   1984

1 Symantec enterprise division within Broadcom, right?

2 A   Yes.

3 Q   Does that division still sell the Symantec Endpoint

4 Protection product?

5 A   Yes.

6 Q   You work in that division, right?

7 A   Correct.

8 Q   And an executive in that division is a man named Adam

9 Bromwich, correct?

10 A   Correct.

11 Q   Do you work under Mr. Bromwich directly or

12 indirectly?

13 A   I work indirectly under Mr. Bromwich.

14 Q   Mr. Bromwich transferred from Symantec to Broadcom as

15 part of the M&A deal we discussed a moment ago, right?

16 A   Correct.

17 Q   And Mr. Bromwich is the CTO of the Symantec

18 enterprise division, right?

19 A   I don't think that's his actual title.

20 Q   What is his title, then?

21 A   He's -- I think it's VP of engineering.

22 Q   And how is it that you report in to Mr. Bromwich

23 indirectly?

24 A   Pretty much every engineering department now reports

25 in to Mr. Bromwich.

David Kane - Cross   1985

1 Q   Why?

2 A   They organize so that all the engineers have a common

3 leader.

4 Q   Do you know why Mr. Bromwich is not here testifying

5 to the jury today?

6 A   No.

7 Q   I next want to get a better understanding of the

8 degree to which you were involved in the version of SONAR

9 that is accused of patent infringement in this case. BASH

10 includes a decision tree component, correct?

11 A   Yes.

12 Q   The decision tree is the component that's

13 specifically directed to machine learning-based

14 protection, right?

15 A   For the behavioral protection, yes.

16 Q   The decision tree component is the one most often

17 referred to as SONAR, right?

18 A   Correct.

19 Q   The decision tree component is behavioral protection,

20 right?

21 A   It is one aspect of the behavioral protection of the

22 product.

23 Q   In the sense of the machine learning part of SONAR,

24 you, David Kane, did not gain responsibility for the BASH

25 team working on the purchase learning component until

David Kane - Cross   1986

1 2014, correct?

2 A   Around that time. I thought it was 2013, but sure.

3 Q   Well, if you could, sir, would you -- I just want to

4 refresh your recollection so we're not going to publish

5 anything to the jury.

6   Would you take a look at your deposition

7 transcript, page 25, lines 3 to 9?

8 A   Okay.

9 Q   Did that refresh your recollection, sir?

10 A   That sounds like a reasonable date, 2014.

11 Q   And do you recall exactly when in 2014? Right at the

12 new year or late in the year?

13 A   I do not.

14 Q   I see. Now, the BASH architect before you was Shane

15 Pereira, right?

16 A   Yes.

17 Q   You yourself did not code anything for the machine

18 learning version of BASH that you could remember except

19 for a minor feature that your lawyers reminded you of

20 before your deposition in this case, right?

21 A   I don't think my lawyers needed to remind me of it,

22 but yes, I did not code the decision tree portion of BASH

23 for that version.

24 Q   You did not code the machine learning decision tree

25 portion of BASH, right?

David Kane - Cross   1987

1 A   I did not.

2 Q   That was not you?

3 A   That was not me.

4 Q   And you understand that it's the machine learning

5 decision tree component of BASH accused of infringement in

6 this case, right?

7 A   I do.

8 Q   And you did not code that?

9 A   I did not code it.

10 Q   The feature you worked on was a minor feature, right?

11 A   The one around that time, yes, a minor feature.

12 Q   And other than that minor feature, you cannot recall

13 coding any other part of the machine learning version of

14 BASH, right?

15 A   Correct, I did not code the machine learning portion

16 of BASH.

17 Q   In fact, you, sir, did not design any of the machine

18 learning technology in the accused products, right?

19 A   I did not design it.

20 Q   You didn't design machine learning BASH? You didn't

21 design any other machine learning aspect of the accused

22 products, right?

23 A   Correct.

24 Q   Even when you became a lead developer for BASH in

25 2014, you did not code any features, correct?

David Kane - Cross   1988

1 A   Correct.

2 Q   In fact, the code for the machine learning component

3 of SONAR has not been touched since 2013, right?

4 A   That sounds reasonable.

5 Q   And you understand, to be clear again, that it is

6 that component of SONAR accused of infringement in this

7 case?

8 A   Yes.

9 Q   Now, you did work on an early version of BASH,

10 including BASH version 1, right?

11 A   Yes.

12 Q   When did you stop working on BASH and Mr. Pereira

13 took over as the BASH architect?

14 A   To my recollection, probably 2006.

15 Q   From 2006 to 2014, you did not work on BASH in any

16 meaningful way, correct?

17 A   I don't know "no meaningful way." I still had my

18 experience working with BASH up to that point, but I'm

19 sure I didn't submit any code for it during that time.

20 Q   Well, let me ask you again, sir. Up until you gained

21 responsibility for BASH again in 2014, you did not work on

22 BASH in any meaningful way. That's a true statement?

23 A   I can help my coworkers if they have questions about

24 how BASH works. That's meaningful to me.

25 Q   Let's take a look at your deposition, 55, lines 4

David Kane - Cross   1989

 1 through 8.

 2   MR. GUZIOR: And then, Mr. Chase, if we could

 3 tee up the video, please.

 4   Let's play the video.

 5   THE COURT: Wait. There's an objection.

 6   MR. LUMISH: Yes, Your Honor. We would ask that

 7 he read or play, if he's going to, through line 13.

 8 Otherwise it's -- we object as not impeaching.

 9   MR. GUZIOR: We'll play the additional lines.

10   THE COURT: All right.

11   (Video Played.)

12 BY MR. GUZIOR:

13 Q   Do you want to read the lines --

14   THE COURT: He said -- he asked you to play the

15 additional lines.

16   MR. GUZIOR: I think our tech will have some

17 difficulty with that, Your Honor. Typically --

18   THE COURT: Well, you should have told that

19 before you played it.

20   MR. GUZIOR: I'll read the additional lines.

21   THE COURT: If I sustain an objection to a video

22 and you don't have the extra lines, just read them in, all

23 right, next time?

24 BY MR. GUZIOR:

25 Q   "QUESTION: In any nonmeaningful way that you can

David Kane - Cross   1990

1 share with me?"

2   "ANSWER: Well, having worked on the first few

3 versions, if someone had a question on the structure of

4 the code, I could help."

5   Now, Mr. Kane, when you were deposed in this

6 case, were you asked those questions and did you give

7 those answers?

8 A   Yes.

9 Q   Now, time period that we're talking about, 2006 to

10 2014 when you did not work on BASH in any meaningful way,

11 that was the time when the accused version of BASH was

12 developed, right?

13 A   Correct.

14 Q   When the accused version of BASH was developed, the

15 technical director for BASH was Shane Pereira, right?

16 A   I'm not sure his exact beginning of his tenure, but

17 yes, he was the responsible person at the time.

18 Q   And at the time, Mr. Pereira was the most

19 knowledgeable person about the operation of BASH, right?

20 A   I don't know that as fact.

21 Q   Let's take a look at your deposition, page 56, lines

22 4 through 8.

23   MR. GUZIOR: And let's play the video,

24 Mr. Chase.

25   (Video Played.)

David Kane - Cross   1991

1 BY MR. GUZIOR:

2 Q   Were you asked that question, and did you give that

3 answer?

4 A   I did.

5 Q   And at your deposition, you rose your hand and swore

6 to tell the truth, just the same as you did today, right?

7 A   (Nodding head.)

8   THE COURT: You have to say yes or no, sir.

9   You didn't say it still.

10 A   (Nodding head.)

11 BY MR. GUZIOR:

12 Q   Do you know if Norton asked --

13   THE COURT: You have to say it. You can't just

14 shake your head.

15   THE WITNESS: Yes, I understand. Sorry.

16   THE COURT: Okay. So you're agreeing with what

17 the question was?

18   THE WITNESS: I did say that.

19   THE COURT: It's my job to make sure the written

20 record shows what is going on. So we can see you nodding

21 affirmatively, but unless you want me to say the witness

22 is nodding affirmatively, it's just much easier to say --

23 or negatively, however it is, just say yes or no. Okay?

24   THE WITNESS: Sure.

25 BY MR. GUZIOR:

David Kane - Cross   1992

1 Q   Do you know if Norton asked Mr. Pereira to testify

2 live at this trial for the jury today?

3 A   I do not know.

4 Q   Do you think they should have?

5 A   I couldn't say.

6 Q   Why not?

7 A   I'm not a lawyer.

8 Q   I see. Lawyers make the decisions about who appears.

9 A   I've been here a week, yeah.

10 Q   I see. Now, I want to talk a bit more about the

11 SONAR/BASH product feature. I think you said during your

12 direct examination that SONAR detects only 1 percent of

13 malware, or if I got that wrong, please let me know?

14 A   It's probably fairly accurate, yeah.

15 Q   But when it comes to value in the type of product

16 that Norton and Symantec sell, it's that 1 percent that is

17 entirely what matters, right?

18 A   No.

19 Q   Can I ask you to take a look, sir, at Exhibit PX-288

20 in your binder?

21   Now, PX-288 is a blog post by your indirect

22 boss, Adam Bromwich, right?

23 A   That is what it looks like.

24 Q   And this is dated February 21st, 2019, right?

25 A   Yes.

David Kane - Cross   1993

1   Q   This is before the M&A transaction with Broadcom,

2   right?

3   A   Correct.

4   Q   Symantec, now Norton, had a blog on which they

5   provided information publicly, right?

6   A   Yes.

7   Q   Now, I'd like you to look at page 3 of this document.

8   And do you see the paragraph that starts, "Each year"?

9   A   Yeah.

10 Q   Could you read that paragraph into the record,

11 please?

12 A   Sure. "Each year we're developing new, advanced

13 technologies because we recognize that there's a world of

14 difference between 99 percent and 100 percent protection.

15 It may not sound like much, but that 1 percent is entirely

16 what matters. All it takes is for one threat to get in

17 and the impact can be huge."

18 Q   Mr. Bromwich made this statement outside the context

19 of this litigation, right?

20 A   Correct.

21   MR. GUZIOR: We can take this down, Mr. Chase.

22 BY MR. GUZIOR:

23 Q   You have not removed the machine learning component

24 from BASH, right?

25 A   Correct.

David Kane - Cross   1994

1 Q   And there are no plans to remove it, right?

2 A   Nothing concrete.

3 Q   And you don't remove it because it makes detections

4 that you don't know yes or no if the malware would have

5 been caught by some other component in the product, right?

6 A   That is not why it's still there.

7 Q   Can we look at your deposition, page 100, lines 11

8 through 17, please?

9   MR. GUZIOR: And, Mr. Chase, let's play the

10 video.

11   (Video Played.)

12 BY MR. GUZIOR:

13 Q   And were you asked that question, and did you give

14 that answer?

15 A   That answer was correct at the time.

16 Q   Sir, just yes or no.

17 A   Yes.

18 Q   Were you asked that question, and did you give that

19 answer?

20 A   Yes.

21 Q   Let's go back to some basics, Mr. Kane. Would you

22 agree with the following statement: A running process or

23 program is an executable image that's loaded into memory

24 by the operating system?

25 A   Yes.

David Kane - Cross   1995

1 Q   It contains code that the operating system then runs,

2 and when that code runs, the operating system provides

3 services so the program can provide functionality for the

4 computer user's benefit or detriment, right?

5 A   Correct.

6 Q   And a program can run in that environment, right?

7 A   The program runs in the operating system, yes.

8 Q   Right. Now, the core -- the core of the BASH engine

9 is just a monitoring system which receives behaviors or

10 events from many sources in the operating system, right?

11 A   Correct.

12 Q   And those behaviors or events can be enhanced and

13 then passed to the detection components for action or

14 analysis, right?

15 A   Correct.

16 Q   The BASH engine, when installed on the operating

17 system, is monitoring most running processes, right?

18 A   Correct.

19 Q   And another word for running processes is executing

20 programs. Fair?

21 A   Yeah. For this, that's fair.

22 Q   The BASH engine is notified when events it's

23 interested in scoring occur, right?

24 A   Yes.

25 Q   Now, when a program runs in an operating system

David Kane - Cross   1996

1 environment with SONAR/BASH installed, in the technical

2 sense the process is loading and running and happy, but

3 the code is in the BASH module, right?

4 A   The code of the program?

5 Q   Yes.

6 A   No.

7 Q   Would you take a look at page 151 of your deposition,

8 at line 22, through page 152 of your deposition at 2?

9 A   151 -- tell me that date(sic) again, the --

10 Q   151.

11 A   Okay.

12 Q   Line 22 through 152, line 2.

13 A   Okay. I see.

14   MR. GUZIOR: Let's play the video, Mr. Chase.

15   MR. LUMISH: May I have just one moment to just

16 read it?

17   THE COURT: Yeah. It's a longer. 152 through

18 what?

19   MR. GUZIOR: 151:22 through 152:2.

20   MR. LUMISH: I object, Your Honor. It's not

21 impeaching.

22   THE COURT: Do you all want to approach to tell

23 me one way or the other?

24   MR. LUMISH: Sure. Approach, Your Honor?

25   THE COURT: Yes.

David Kane - Cross   1997

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 1          (The following was out of the presence of the

 2          jury:)

 3          MR. GUZIOR:   I just asked the witness this

 4 question almost verbatim, and he disagreed with it.  And

 5 I'd be happy to ask it even more directly if I could make

 6 it clearer.

 7          THE COURT:   Okay.

 8          MR. LUMISH:   The difference, Your Honor, is he

 9 added -- he said the code of the program, which is not

10 what Mr. Kane testified to.   He doesn't say the code of

11 the program is in the module.

12          THE COURT:   What is the CPU code pointer?

13          MR. LUMISH:   Right.   It's this process.   They're

14 talking about the process running.   They're talking about

15 something else, but now he's trying to bring in the

16 program, which Mr. Kane did not testify to.

17          MR. GUZIOR:   I think he testified directly

18 contrary to this, Your Honor, but I can make it clearer if

19 that --

20          THE COURT:   Yeah, I'm not sure it is clear.   He

21 did say the program.

22          MR. GUZIOR:   I'll make it clear.

23          (The following was in open court:)

24 BY MR. GUZIOR:

25 Q    Mr. Kane, do you still have my question in mind?
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David Kane - Cross   1998

1 A   Yes.

2 Q   Now, when SONAR/BASH is installed in the operating

3 system, in the technical sense, the process is loading and

4 running and happy, but the code is currently in the BASH

5 module, or the CPU code pointer is inside the BASH module,

6 right?

7 A   If it happens to be servicing an operating system

8 called from the program that's running, then yes.

9   THE COURT: Okay. That was too fast, and I

10 didn't understand. I'm sorry.

11 A   The program would have made an operating system

12 request. That goes to the kernel, and that goes to the

13 monitoring aspect of BASH. So the CPU right then is

14 executing code that's inside of BASH while the program

15 thinks the operating system is working on behalf of

16 whatever request the program made.

17   THE COURT: What do you mean by "the program"?

18   THE WITNESS: So if it says pop up a window and,

19 you know, the operating system says, okay, hold on a

20 second, let me pop up a window for you, if BASH is being

21 notified of, hey, window pop-ups are coming, it may be

22 told, hey, a window pop-up was requested.

23   So then BASH can decide usually whether or not

24 to tell the operating system to proceed with popping up

25 the window or to say no, no, this behavior is bad and we

David Kane - Cross   1999

 1 want to terminate that program.

 2 BY MR. GUZIOR:

 3 Q   But the code, sir, when that happens is presently or

 4 currently in the BASH module, right?

 5 A   The CPU is executing code that's in the BASH module.

 6 Q   In the BASH module, right?

 7 A   CPU is executing code that is within the BASH module.

 8 Q   Thank you, sir.

 9   And what that means is that the running program

10 is running just as if it were in a normal operating system

11 environment and it does not know that it is being

12 monitored and scored by BASH, right?

13 A   The goal is transparency, that's correct.

14 Q   Without SONAR/BASH installed, the program would

15 simply run without BASH monitoring and scoring. Fair?

16 A   Correct.

17 Q   Now, as a result of scoring, BASH can prevent an API

18 from being executed, right?

19 A   From being completed, but yes.

20 Q   And as a general matter, BASH will allow most calls

21 made in the operating system environment to continue; is

22 that fair?

23 A   Correct.

24 Q   So BASH can select whether it allows a call to be

25 terminated or to go forward, and deciding to fulfill an

David Kane - Cross   2000

 1 operating system request is under BASH's control, right?

 2 A   Correct.

 3 Q   BASH either selectively allows or blocks the API

 4 call, right?

 5 A   Correct.

 6 Q   As tools, BASH utilizes both kernel mode and user

 7 mode hooking among other tools, right?

 8 A   For purposes of notifications, yes.

 9 Q   Those are techniques BASH uses to monitor activities

10 of a process and to allow or deny it depending on the

11 capabilities of the notification called out, right?

12 A   Correct.

13 Q   Now, behaviors of a running process are evaluated by

14 SONAR/BASH in a process called scoring, right?

15 A   Yes.

16 Q   In order to score, BASH looks at behaviors of the

17 potential malware, and the attributes of the decision tree

18 are generally attributes of the process, including

19 behaviors, right?

20 A   It's complicated -- that -- yes, that sounds

21 accurate.

22 Q   Well, I don't want you to just agree with me, sir.

23 Is that right or not?

24 A   I think it's factually right. It's just a little

25 tortured reading.

David Kane - Cross   2001

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 1              THE COURT:  A little what?

 2              THE WITNESS:  Tortured reading, yeah.  Painful

 3  language.

 4  BY MR. GUZIOR:

 5  Q    They were your words, sir.

 6  A    I know.

 7  Q    You know those were your words?

 8  A    Yeah.

 9  Q    How do you know those were your words?

10  A    Because I've read the deposition.

11  Q    You looked at it to get ready to talk to the jury

12  today, right?

13  A    Yeah.  Not today, but yes, I've read the deposition

14  somewhat recently, right.

15  Q    Right.  And those attributes of the running process

16  are used in the evaluation on the decision tree, right?

17  A    Correct.

18  Q    The result of scoring is a disposition either good or

19  bad, right?

20  A    Correct.

21  Q    We just talked about SONAR/BASH with hooking, but now

22  I want to ask you about something called a virtual

23  machine.  Do you understand?

24  A    Yes.

25  Q    Can the use of a virtual machine sometimes be
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David Kane – Cross   2002

1 referred to as sandboxing?

2 A   It could be, but you'd have to be specific about what

3 type of virtual machine we were talking about, yes.

4 Q   It could be?

5 A   Could be.

6 Q   Potential malware can be detonated in a virtual

7 machine, right?

8 A   Yes.

9 Q   Symantec and Norton use something called DMAS, which

10 includes BASH and a virtual machine, right?

11 A   Yes.

12 Q   The BASH component monitors threats being detonated

13 in the virtual machine, right?

14 A   BASH is also in the virtual machine, but yes.

15 Q   That process includes the machine learning decision

16 trees in the virtual machine, correct?

17 A   Yes.

18 Q   So DMAS executes a program in a virtual machine and

19 scores it with the BASH decision tree, right?

20 A   The whole operating system is in the virtual machine,

21 but yes.

22 Q   What do you mean when you say "the whole operating

23 system is in the virtual machine"?

24 A   The architecture of DMAS is to give a virtual CPU and

25 computer on which you would install an operating system.

David Kane - Cross   2003

1 Q   Next, Mr. Kane -- and thank you for your patience

2 this morning -- I want to take a look at some of the

3 statements that Norton's lawyer made about the SONAR/BASH

4 technology during opening statements and ask you if you

5 agree or disagree with those statements.

6 A   Okay.

7 Q   Do you understand?

8 A   Yep.

9   MR. GUZIOR: Mr. Chase, would you please pull up

10 page 300 of the trial transcript, lines 21 to 22?

11 BY MR. GUZIOR:

12 Q   Just let me know when you're ready, Mr. Kane.

13 A   Okay.

14 Q   Now, Norton's counsel, speaking about the opening

15 presentation from Columbia said, "So when he spent several

16 slides showing you that we stop anomalies, we agree." Is

17 that a true statement?

18 A   I would want you to help me understand what anomalies

19 means here.

20 Q   I'm only asking -- it may be that you disagree with

21 Norton's lawyer. What I'm asking you is do you agree that

22 the accused products stop anomalies?

23 A   No.

24   MR. LUMISH: Objection, Your Honor. Lacks

25 foundation if he's not going to tell him or show him the

David Kane - Cross   2004

 1 rest of the context of what the anomalies are.

 2   MR. GUZIOR: He has the transcript in front of

 3 him.

 4   THE COURT: Well, he has the blown-up version.

 5   Do you have the whole transcript?

 6   THE WITNESS: I have it, yeah.

 7   THE COURT: All right.

 8   THE WITNESS: Give me a minute to read.

 9   THE COURT: We'll give him a minute.

10   MR. GUZIOR: Yes. Thank you, Your Honor.

11 A   Okay.

12 BY MR. GUZIOR:

13 Q   Do you agree with the representation that Norton's

14 lawyer made to the jury that the accused products stop

15 anomalies?

16 A   The accused products stops anomalies if we refer to

17 anomalies as viruses, ransomware and malware.

18   THE COURT: Wait. Wait. Wait. That was too

19 fast.

20   THE WITNESS: Oh, sorry.

21   THE COURT: I'm sorry. I heard some of it, but

22 could you repeat it, please.

23   THE WITNESS: The prior paragraph defines

24 anomalies as viruses, malware and ransomware.

25 BY MR. GUZIOR:

David Kane - Cross   2005

1 Q   And in the context of those types of programs, you

2 would agree that the accused products stop anomalies,

3 right?

4 A   Yes.

5 Q   Okay. Let's now take a look at the trial transcript

6 at page 307, lines 14 to 20, please.

7   And, Mr. Kane, you should take a look to read

8 the whole page, but the statements here are, "So the

9 function call will get made by the program." And there

10 was a mistake with the slides. "I'm sorry. Will get made

11 by the program. And Norton will evaluate it, and it will

12 say it's either a valid function call or it's a malicious

13 function call. And if it's valid, go on uninterrupted.

14 If it's malicious, some action will be taken. Those can

15 vary, but you can imagine it might shut it down." Do you

16 see that?

17 A   Yes.

18 Q   Are those true statements?

19 A   Yeah.

20 Q   You agree with them?

21 A   Yes.

22 Q   As a fact witness who's familiar with the technology,

23 you agree with the statements from Norton's lawyer, right?

24 A   Yes.

25 Q   Thank you, sir.

David Kane - Cross   2006

1   Finally, Mr. Kane, I want to talk about the

2   topic of models. During your direct examination, you gave

3   testimony about your understanding of what constitutes a

4   model, right?

5   A   Yes.

6   Q   Now, I want to be clear, Mr. Kane, you did not

7   provide an opinion that SONAR/BASH does not infringe

8   Columbia's patent claims, right?

9   A   I have expressed no opinion about that.

10 Q   And you know that the jury is hearing from experts

11 who will express opinions on that, right?

12 A   That's how I understand trials work.

13 Q   Right. And you, yourself, are not here able to say

14 that SONAR/BASH does not infringe Columbia's patents,

15 right?

16 A   I am not able to say.

17 Q   And the jury has heard from an expert witness,

18 Dr. Bailey, who has a Ph.D. in computer science. I also

19 don't have a Ph.D. in computer science. I don't even have

20 a master's degree in computer science. But, Mr. Kane, you

21 also do not have any form of graduate degree in computer

22 science, right?

23 A   No.

24 Q   You also don't have even any certification or other

25 nonformal education in computer security, right?

David Kane - Cross   2007

1   A   Aside from 20 years' experience, no.

2   Q   Yeah, but no nonformal education or certification in

3   computer security?

4   A   The paperwork wasn't useful to me, no.

5   THE COURT: I'm sorry.   Now you're a little far

6   away.

7   THE WITNESS: Sorry.   I didn't need the

8   paperwork.

9   THE COURT: Okay.

10 BY MR. GUZIOR:

11 Q   Please take a look in your binder at the tab that's

12 labeled IEEE.

13   MR. GUZIOR: And let's put that up on the

14 screen, Mr. Chase.

15 BY MR. GUZIOR:

16 Q   And I'd like you to look at page 3, and in the first

17 column, I'd like you to look at the definition Model 1, a

18 mathematical or physical representation, all the way

19 through 5, a representation of one or more aspects of a

20 system.

21 A   Okay.

22 Q   Have you seen this before?

23 A   No.

24 Q   So when you talked to the jury earlier about what was

25 and was not a model, you did that without having seen the

David Kane - Cross   2008

 1 IEEE's definition of what constitutes a model, right?

 2 A   Yes.

 3 Q   Do you have any basis to disagree with this?

 4 A   No.

 5 Q   No basis to disagree?

 6 A   No.

 7 Q   Your colleague, Mr. Pereira, defined a model as a

 8 representation of information. Any basis to disagree with

 9 him?

10 A   No.

11 Q   Mr. Pereira said that a model of function calls, a

12 simple model of function calls could be built by counting

13 function calls. Any basis to disagree with that?

14 A   No.

15   MR. GUZIOR: Mr. Chase, we can take this down.

16 BY MR. GUZIOR:

17 Q   Now, Mr. Kane, when you talked about models, you did

18 so in the context of BASH submissions and decision trees,

19 right?

20 A   It's purely the decision trees.

21 Q   But you did not intend to represent to the jury that

22 you, yourself, had a role in developing or determining the

23 code for how the decision trees used in BASH are trained,

24 right?

25 A   Correct.

David Kane - Cross   2009

1 Q   You didn't do any of that?

2 A   I didn't do the code for the decision tree.

3 Q   What is training?

4 A   Training is giving features to a machine learning

5 algorithm to generate a machine learning output tree,

6 decision tree.

7 Q   Which is a model?

8 A   Which, as far as I've been speaking, that's a model.

9 Q   Training is a term used in the context of SONAR/BASH

10 decision trees, right?

11 A   Yes.

12 Q   Did you intend to represent to the jury today that

13 you had any kind of role in creating the decision trees?

14 A   No, I did not create the decision trees.

15 Q   You didn't do that?

16 A   (Shaking head.)

17 Q   At least in recent history -- and I understand this

18 is no longer his job, but a man named Jokul Tian was the

19 person most knowledgeable about training the decision

20 trees, right?

21 A   That's correct.

22 Q   And Mr. Tian actually works with you at Broadcom,

23 right?

24 A   Yes.

25 Q   Do you know why he's not testifying here today?

David Kane - Cross   2010

1 A   I do not know.

2 Q   Do you know if he was asked?

3 A   I don't know.

4 Q   I see. Was that another decision made by the

5 lawyers?

6 A   It's all decided by the lawyers.

7 Q   All of it, right? I withdraw the question.

8   Before Mr. Tian, the most knowledgeable person

9 on that same topic was Shane Pereira, right?

10 A   Of training the trees? I don't think so. We

11 probably need a timeline here.

12 Q   Let me see if I can refresh your recollection, sir.

13 A   Yeah.

14 Q   Would you look at your deposition, page 50, line 15,

15 through page 51, line 2?

16 A   Okay.

17 Q   Let me ask you again, Mr. Kane, before we play the

18 video. Mr. Tian was the most knowledgeable person about

19 training the BASH decision trees, and before Mr. Tian, the

20 most knowledgeable person was Mr. Pereira, right?

21 A   I believe Shane had left Symantec before Jokul took

22 over as the trainer.

23 Q   Well, let's -- let's play your deposition, then, at

24 page 50, line 22 through page 51, line 2.

25   THE COURT: There's an objection.

David Kane - Cross   2011

1   MR. LUMISH: Objection, Your Honor. It's not

2   impeaching.

3   MR. GUZIOR: Your Honor, it's directly

4   inconsistent.

5   THE COURT: You're going to have to tell me how

6   it's not impeachment.

7   MR. LUMISH: He hasn't asked him this question

8   about this time and gotten an answer that's inconsistent

9   with it.

10   MR. GUZIOR: Your Honor, lines 51:1 to 52:2 is

11   exactly what the witness is now saying is not correct.

12   THE COURT: I think actually that is

13   impeachment, if he said he was gone.

14   MR. GUZIOR: Mr. Chase, let's play page 50,

15   line 22 through page 51, line 2.

16   (Video Played.)

17   BY MR. GUZIOR:

18   Q   Were you asked that question, and did you give that

19   answer, sir?

20   A   Yes.

21   Q   Now, we certainly can agree that when SONAR/BASH is

22   installed on a customer's computer, it sometimes will

23   create something called a BASH submission, which is

24   submitted from the endpoint to a Symantec server, right?

25   A   Correct.

David Kane - Cross   2012

1 Q   And endpoint is the customer computer, right?

2 A   It would be, yes, a customer computer.

3 Q   Now, SONAR/BASH also can create something different

4 called a ping, right?

5 A   Correct.

6 Q   And --

7   THE COURT: Are you saying P-I-N-G?

8   MR. GUZIOR: P-I-N-G.

9   THE COURT: All right.

10 BY MR. GUZIOR:

11 Q   And ping is telemetry, right?

12 A   It's all telemetry.

13 Q   But ping is a type of telemetry?

14 A   Ping is a form of our telemetry.

15 Q   Now, you understand, sir, that the ping is not

16 accused of infringement in this case. It's the

17 submission, right?

18 A   Okay.

19 Q   You weren't told that when you came in here to give

20 testimony about what was and wasn't a model?

21 A   The submission I understand. I don't know about the

22 ping, if it's in scope or not.

23 Q   Okay. Well, let's just talk about the ping a little

24 bit to find out what you know. The ping is smaller than

25 the BASH submission and contains more limited metadata and

David Kane - Cross   2013

1 is faster to submit, right?

2 A   Correct.

3 Q   The ping only contains a subset of what's in the BASH

4 submission, right?

5 A   Correct.

6 Q   The BASH submission, for example, contains a list of

7 shields, but the BASH ping does not include that list,

8 right?

9 A   Correct.

10 Q   What is a list of shields, sir?

11 A   So for the language that I had been using earlier,

12 it's kind of the recorded behaviors of the program that

13 was being submitted.

14   MR. GUZIOR: And could we switch to the ELMO for

15 a moment, please, Ms. Hancock?

16 BY MR. GUZIOR:

17 Q   Now, Mr. Kane, I just want to make sure we have a

18 common understanding when we talk about a list of shields

19 in the BASH submission.

20 A   Uh-huh.

21 Q   And I just -- I want to get a sense of whether that's

22 something complex or something simple, but understanding

23 that the BASH submission would be written in computer

24 code, would it be fair to say that the list of shields is

25 just a simple list, we could think of it as Shield 1,

David Kane - Cross   2014

1 Shield 2, Shield 3?

2 A   Yeah.

3 Q   Okay. Let me just write that down.

4   And just for demonstrative purposes, the list is

5 really as simple as just Shield 1, Shield 2, Shield 3,

6 right?

7 A   The identifiers are probably longer than you've

8 written, but yeah.

9 Q   And you would agree with this is just shorthand for

10 how simple the list of shields is?

11 A   Correct.

12 Q   Okay.

13   MR. GUZIOR: Your Honor, I'm going to mark this

14 as -- for identification only as demonstrative PX-1001.

15   THE COURT: All right. It will be so marked.

16 Just to be clear on the record, it said S1, comma, S2,

17 comma, S3.

18   MR. GUZIOR: Thank you, Your Honor.

19 BY MR. GUZIOR:

20 Q   There is a one-to-one correspondence between an API

21 and a shield, right?

22 A   Probably, yes.

23 Q   Probably, yes?

24 A   Without the list of shields in front of me, I'm going

25 to guess it's yes.

David Kane - Cross   2015

1 Q   Well, I don't want your guess, sir. Maybe -- let me

2 ask you this. When you took over as -- as the technical

3 director for BASH in 2014, you believed that the most

4 knowledgeable person about user mode hooking was a

5 gentleman named Uriel Mann, right?

6 A   Yes.

7 Q   And I'd like to play a little bit of video from

8 Mr. Mann and ask you whether you agree with him or

9 disagree with him. Is that okay?

10 A   Okay.

11   MR. GUZIOR: Mr. Chase, can we play the Uriel

12 Mann clip, which is 7, lines 10 through 13, page 12,

13 lines 5 through 13, and page 136, line 24 to page 137,

14 line 6?

15   Ms. Hancock, could we switch back to our system?

16 Apologies. Thank you.

17   MR. LUMISH: Your Honor, before we play it, do

18 we have a copy of the transcript?

19   MR. GUZIOR: Yes, we do.

20   Mr. Lumish, here it is.

21   MR. LUMISH: Do you have one for the witness as

22 well?

23   MR. GUZIOR: We do. We come prepared.

24   Mr. Chase, could we play the video, please?

25   THE COURT: Why don't you give --

David Kane - Cross   2016

1   MR. GUZIOR: Yeah, absolutely, Your Honor.

2 Apologies.

3   Your Honor, perhaps I can move forward and

4 return to this issue?

5   THE COURT: I think -- we're almost ready,

6 aren't we?

7   MR. LUMISH: Yes, Your Honor. I'm sorry. I'm

8 going as fast as I can.

9   No objection to playing the video, Your Honor.

10   THE COURT: Okay. Go ahead, then.

11   MR. GUZIOR: Thank you, Your Honor.

12   (Video Played.)

13 BY MR. GUZIOR:

14 Q   Sir, to be -- I don't believe you said anything

15 inconsistent with that, but do you have any reason to

16 disagree with Mr. Mann that there's a one-to-one

17 relationship between a specific API and a specific shield?

18 A   In the sense that he said that, that's correct.

19 Q   What do you mean by that qualification?

20 A   Because he did qualify "for UMH" at the end of the

21 sentence.

22 Q   Fair enough. But for UMH, you would agree that there

23 is a one-to-one relationship between an API and a shield,

24 right?

25 A   Yes.

David Kane - Cross   2017

1 Q   Now, the full BASH submission, not the ping, was used

2 to create new decision trees, right?

3 A   Yes.

4 Q   Not the ping, right?

5 A   Not the ping.

6 Q   The submission?

7 A   The full submission.

8 Q   The BASH submission contains more information,

9 including enough information to know exactly how the

10 detection was made within the BASH component, right?

11 A   Correct.

12 Q   And we can agree at a minimum, that BASH submissions

13 are inputs to create new SONAR/BASH decision trees, right?

14 A   Portions of those submissions is input to creating a

15 new decision tree.

16 Q   Portions of the BASH submission --

17 A   Yes.

18 Q   -- is that right?

19 A   Correct.

20 Q   And, again, those BASH submissions are created on

21 different computers around the world, right?

22 A   Each computer makes its own submission, if it needs

23 to.

24 Q   But, sir, the collection of BASH submissions, parts

25 of which are used as inputs for decision trees, those are

David Kane - Cross   2018

1   generated on different customer computers around the

2   world, right?

3   A   Correct.

4   Q   Now, it's your position, Mr. Kane, that BASH

5   submissions are not models and a SONAR/BASH decision tree

6   is not a combined model. Do I have that right?

7   A   Correct.

8   Q   And that's your position, not an expert opinion?

9   A   Correct.

10 Q   So just bear with me for just a short while longer,

11 Mr. Kane. Let's please take a look at the document in

12 your binder identified as PX-236. PX-236 is another

13 Symantec blog post, right?

14 A   Yes.

15 Q   And this is dated November 2016, and it's authored by

16 Mr. Bromwich again, with co-author Andrew Gardner, right?

17 A   Yes.

18 Q   And Mr. Bromwich is your indirect boss, right?

19 A   That's correct.

20 Q   I think you said all of the engineers of the Symantec

21 division within Broadcom at least indirectly report to

22 him, right?

23 A   Right now, that's how it's arranged, yes.

24 Q   I see. Now, at the top of this article there's a

25 reference to machine learning to "analyze file attributes,

1 behaviors and relationships." Do you see that?

2 A   Yes.

3 Q   And as we discussed earlier, SONAR, which has

4 multiple components, is typically understood as the

5 behavior component, right?

6 A   SONAR is the behavior component, yeah.

7 Q   And the decision trees are the machine learning part

8 of SONAR, right?

9 A   SONAR almost specifically means the decision trees

10 part of the behavioral component.

11 Q   What do you mean by that?

12 A   The decision trees are SONAR. That's why -- that's

13 why we kind of use SONAR and BASH and they slide back and

14 forth. But if we're being specific, SONAR is almost

15 always in reference to the machine learning aspects.

16 Q   I see. Now, Mr. Kane, this article has a video

17 that's been marked as PX-235 that had previously been

18 shared with opposing counsel, and I'd like to play that

19 video and ask you some questions about it. Is that okay?

20 A   Okay.

21 Q   Okay.

22   (Video Played.)

23 BY MR. GUZIOR:

24 Q   Mr. Kane, anything in that video you disagree with?

25 A   Not right off the bat, no. It sounds reasonable to

1 me.

2 Q   Right. Now, I want to take a look back at the

3 article. We're going to spend some more time with this

4 document. I just wanted to lay some groundwork there with

5 the video.

6 A   Sure.

7 Q   And let's look at page 2 of the article, and do you

8 see the paragraph that starts, "For Symantec Endpoint

9 Protection 14"?

10 A   Yep.

11 Q   And in this paragraph, Mr. Bromwich talks about

12 "multi-layered threat assessment," right?

13 A   Yes.

14 Q   And one of the layers is how the file behaves

15 (dynamic). Do you see that?

16 A   Yes.

17 Q   And as we talked earlier, SONAR component is the

18 component that analyzes dynamic behavior, right?

19 A   The BASH component, including SONAR.

20 Q   Thank you for that. The BASH component in SONAR,

21 right?

22 A   The SONAR component of BASH, if we paint it

23 correctly.

24 Q   The SONAR component of BASH?

25 A   SONAR is a detection engine. BASH has several, yeah.

David Kane - Cross   2021

1 But I think we can just call it SONAR.

2 Q   Now, if we look underneath this paragraph, do you see

3 that there's an identification of static attributes and

4 dynamic behaviors?

5 A   Yes.

6 Q   And as we, I think, touched upon earlier, the

7 SONAR/BASH decision trees include some static attributes

8 and some dynamic behaviors, right?

9 A   Yes.

10 Q   Mr. Bromwich then says in this paragraph that "the

11 beauty of these dimensions is that they are

12 complementary." What do you understand that to mean?

13 A   That gets back to the layered picture from before.

14 The static attributes are primarily used in detecting file

15 with the AV scanner, the file scan.

16   THE COURT: Now you're really soft.

17   THE WITNESS: Sorry.

18   THE COURT: I'm having trouble.

19 A   Okay. And the dynamic behaviors are primarily the

20 ones that are used in the SONAR machine learning detection

21 and our policy protection, and the relationships and

22 reputation is the cloud stuff that we spoke about before.

23   The only thing missing from this little list is

24 the network protection because there's not machine

25 learning in there to speak of.

David Kane - Cross   2022

1 Q   Now, have you ever talked with Mr. Bromwich about

2 this particular article?

3 A   I didn't know he wrote it.

4 Q   Right. Let's take a look at the next page, page 3.

5 And do you see the paragraph that starts, "One of the key

6 techniques"?

7 A   Yes.

8 Q   Could you read that into the record, please, sir?

9 A   Sure. "One of the key techniques we use is

10 ensembling."

11   THE COURT: But slowly.

12 A   Oh, sorry. "Which is a fancy way of saying, 'Use

13 many models and combine them in a good way.' It's key to

14 getting the best models possible and was famously used in

15 the $1 million Netflix Prize. We add some magic through

16 proprietary ensembling techniques that allow our systems

17 to learn how best to combine predictions from many

18 different models, even when we don't know during training

19 what the correct predictions are."

20 Q   Now, again, sir, you don't know why the author of

21 this article, Mr. Bromwich, is not testifying today rather

22 than yourself, right?

23 A   I don't know.

24 Q   You don't even know if Norton's lawyers asked

25 Mr. Bromwich to come explain these statements about

David Kane - Cross   2023

1 combined models, do you?

2 A   I don't know.

3 Q   Okay. Thank you, sir.

4   MR. GUZIOR: I pass the witness, Your Honor.

5   THE COURT: How long do you think you'll be on

6 redirect? It might be a good time for a short break.

7   MR. LUMISH: A short break would be welcomed,

8 Your Honor.

9   THE COURT: Okay. Why don't we not take the

10 lunch break, because you're not going to be that long, are

11 you, sir?

12   MR. LUMISH: No.

13   THE COURT: Okay. We'll come back until --

14 let's say 12:30 and then we'll have a lunch break. All

15 right.

16   So, please, ladies and gentlemen, stay seated as

17 the jury leaves the courtroom.

18   (The jury exited the courtroom.)

19   THE COURT: Is Dr. Jaeger in the courtroom?

20   DR. JAEGER: I am, yes.

21   THE COURT: Sir, can I ask you just to step out

22 for one minute?

23   DR. JAEGER: Certainly.

24   (Dr. Jaeger exited the courtroom.)

25   MR. GUZIOR: Your Honor, could we also excuse

David Kane - Cross   2024

 1 the witness?

 2   And in light of what just happened, could you

 3 just remind him that he's not supposed to speak with his

 4 lawyers?

 5   THE COURT: Yes. I have a question about an

 6 earlier issue.

 7   THE WITNESS: Sure.

 8   THE COURT: You're excused, but you can't speak

 9 to your lawyers until we finish cross.

10   MR. GUZIOR: Thank you, Your Honor.

11   (The witness exited the courtroom.)

12   THE COURT: All right. With respect to your

13 issues with Dr. Jaeger, I want to ask the parties about

14 slide 9 and why it relates to the emulator. It's objected

15 to, I think.

16   MR. ELLIOTT: Yes, Your Honor. That slide --

17   THE COURT: Go ahead and --

18   MR. ELLIOTT: May I approach?

19   THE COURT: Please approach.

20   MR. ELLIOTT: Your Honor, that slide doesn't

21 relate specifically to the emulator element. It relates

22 to another unconstrued term, which is the notify and

23 notifying the Application Community limitation and appears

24 to -- again, is a portion of the specification that

25 relates to that element.

2025

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 1              THE COURT:  Okay.  Thank you.  Do you all want
 2  to say anything in response?
 3              MR. PATHMANABAN:  Your Honor, this slide is
 4  simply just background about patents.  He's not going to
 5  opine -- as I said earlier, he's certainly not going to
 6  opine about the meaning of any particular term and
 7  certainly not about notifying.  He's going to say the
 8  point of this slide is do they describe doing anything
 9  after determining if a function call is good or bad.
10  Yeah, you notify the community.  That's -- that's the
11  point of this slide.  So I'm not sure what the basis of
12  the objection is here.
13              THE COURT:  Is it a part of the patent, a
14  limitation?
15              MR. PATHMANABAN:  I'm sorry?
16              THE COURT:  Is it a limitation on the patent?
17              MR. PATHMANABAN:  There is one limitation in the
18  '115 patent, Claim 2, Your Honor, about notifying
19  Application Community.
20              THE COURT:  Is this it?
21              MR. PATHMANABAN:  No.  This is the
22  specification.  And there is a related claim limitation,
23  which is -- which appears on slide -- if you have the
24  slides, it appears on slide 45.
25              THE COURT:  Okay.  I just want to ask the
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2026

 1 question.

 2   Do you all have anything else except to remind

 3 me what time I said we were coming back?

 4   MR. LUMISH: I think you said 12:30.

 5   THE COURT: 12:30. I knew that.

 6   Okay. We'll take a brief recess until 12:30.

 7   (Recess from 12:15 p.m. until 12:30 p.m.)

 8   THE COURT: So, Mr. Lumish, if you want to

 9 approach before they are here.

10   MR. LUMISH: Thank you, Your Honor.

11   THE COURT: I presume you wanted to do it that

12 way; is that correct?

13   MR. LUMISH: To?

14   THE COURT: Be at the lectern.

15   MR. LUMISH: Happy to be up here, Your Honor.

16 Thank you. Save time.

17   (The jury entered the courtroom.)

18   THE COURT: Okay. We're ready to go?

19 Obviously, counsel is.

20   And this -- and, sir, I'll remind you you're

21 still under oath.

22   THE WITNESS: Yes.

23   THE COURT: Okay.

24   **REDIRECT EXAMINATION**

25 BY MR. LUMISH:

David Kane - Redirect   2027

1 Q   Mr. Kane, I want to take you back through some of the

2 questions that Columbia's lawyers asked you, if I might,

3 sir.

4 A   Sure.

5 Q   One of the subjects he asked you about was whether

6 you had coded certain aspects of SONAR/BASH in the

7 decision tree. You didn't code all the aspects of

8 SONAR/BASH in the decision tree. Does that mean you don't

9 know how they work?

10 A   I know how they work.

11 Q   How do you know how they work?

12 A   When I took over as architect, I was responsible for

13 their working.

14 Q   And did you review the code?

15 A   I reviewed the code.

16 Q   How many times would you say?

17 A   Not very many because it still wasn't very active by

18 the time I took it over.

19 Q   Have you worked with the code?

20 A   Yes.

21 Q   Are you able to understand the code?

22 A   Largely, yeah.

23 Q   Even without a Ph.D., sir?

24 A   Yes.

25 Q   There was some discussion about you not working on

David Kane - Redirect   2028

 1 BASH between 2006 and 2014. When you started to work on

 2 it again in 2014, can you tell us again what your role

 3 was?

 4 A   I was the technical director at that time for several

 5 components, including BASH.

 6 Q   And did that help you understand -- or did your work

 7 involve understanding how SONAR/BASH works?

 8 A   Technical director or architect, yes, the questions

 9 come to me first and usually I would have to find the

10 answer myself.

11   MR. LUMISH: Can we bring up, Mr. Schmoller,

12 PX-288 at page 3?

13 BY MR. LUMISH:

14 Q   This is a document that Columbia's lawyers showed

15 you, sir.

16   MR. LUMISH: And if you can bring up the

17 paragraph that starts, "Each year," please.

18 BY MR. LUMISH:

19 Q   Do you recall this statement that was shown to you

20 from PX-288, sir?

21 A   Yes.

22 Q   And it says, "Each year, we're developing new,

23 advanced technologies because we recognize that there is a

24 world of difference between 99 percent protection and

25 100 percent protection. It may not sound like much, but

David Kane – Redirect   2029

1 that 1 percent is entirely what matters."

2   Did Columbia's lawyers show you anything to

3 suggest that this is the 1 percent that is stopped by

4 SONAR/BASH?

5 A   Not at all.

6 Q   Do you see anything about this that suggests it's

7 1 percent of the threats that SONAR/BASH stops as opposed

8 to the other layers of protection?

9 A   Nope.

10   MR. LUMISH: Can you pull that down, please,

11 Mr Schmoller?

12   Well, I just meant the call out.

13 BY MR. LUMISH:

14 Q   The document refers to something called an AV test.

15   MR. LUMISH: If we can bring that back up.

16 A   Yes.

17   MR. LUMISH: Look at the top line, for example.

18 BY MR. LUMISH:

19 Q   What does AV stand for?

20 A   Antivirus. This is a third-party test comparing us

21 to competitors.

22 Q   Okay. All right. Let's turn to your deposition

23 questions.

24   MR. LUMISH: If you could bring up Mr. Kane's

25 deposition, Mr. Schmoller, page 100, please.

David Kane - Redirect   2030

 1 BY MR. LUMISH:

 2 Q   And this was shown to you and I think presented as

 3 impeachment of your testimony.

 4   MR. LUMISH: So 100, lines 11 through 17,

 5 please.

 6 BY MR. LUMISH:

 7 Q   The question in the deposition was, "And if its

 8 performance -- if you consider its performance

 9 unacceptable, why haven't you removed it from the

10 software?"

11   And your answer was, "Because it still makes

12 detections that we don't know yes or no, if it would have

13 been caught by the policy engine or some other component

14 in the product."

15   And as I heard your testimony in trial, you said

16 that was true at the time. Did something change?

17 A   It's effectiveness has decayed.

18   MR. GUZIOR: Objection, Your Honor.

19   THE COURT: What's your objection?

20   MR. GUZIOR: This is excluded under your motion

21 in limine ruling.

22   MR. LUMISH: I'm just following up on why this

23 wasn't impeachment, Your Honor. He impeached him as if he

24 told a mistruth, and in fact --

25   THE COURT: Well, you're going to have to make a

David Kane - Redirect   2031

1 proffer of what he's going to say. Maybe we should just

2 take lunch. How long is this going to take?

3   MR. LUMISH: Ten minutes to 15 minutes max.

4   THE COURT: Okay. All right.

5   (The following was out of the hearing of the

6   jury:)

7   THE COURT: Yes, sir.

8   MR. LUMISH: Mr. Guzior attempted to impeach him

9 with that testimony. The witness' testimony was that at

10 that time it was true. I just want to know why -- if

11 that's changed, because he impeached him on something that

12 wasn't impeaching.

13   MR. GUZIOR: I have no objection to the witness

14 saying that statement was true at the time. I don't

15 believe it's true today.

16   I have an objection to getting into the details

17 of that, which is the BASH BPE issue that was subject to

18 Your Honor's motion in limine ruling about BPE taking

19 over.

20   THE COURT: Which motion in limine was it?

21   MR. GUZIOR: That was motion in limine number 3

22 that Columbia filed.

23   MR. LUMISH: That's not what the witness was

24 saying, Your Honor. He was saying it's decayed. That's

25 all he said.

David Kane - Redirect   2032

1   THE COURT: I know, but you're saying --

2   MR. LUMISH: I'm not asking about BPE.

3   THE COURT: Well --

4   MR. GUZIOR: But that's the --

5   THE COURT: -- are you going to elicit --

6   MR. LUMISH: I'm sorry?

7   THE COURT: Are you going to elicit that

8   testimony?

9   MR. LUMISH: I will not elicit it. And I don't

10 really need more than what he just said, but if the

11 objection -- I mean, so if the objection just -- I'm happy

12 to stop where he was if we're not striking the testimony

13 that we have.

14   MR. GUZIOR: If he's not going to get into the

15 details, I'm fine with it, Your Honor.

16   MR. LUMISH: I have no intention --

17   THE COURT: I know, but is he going to say BPE?

18   MR. GUZIOR: I can say without giving us the

19 details.

20   THE COURT: Okay. Is that okay with you?

21   MR. GUZIOR: I'm okay with that, Your Honor.

22   MR. LUMISH: I'll lead him that it's decayed.

23   THE COURT: Okay. That's fine. I mean, I

24 don't -- I don't see an intent to go around --

25   MR. LUMISH: No.

David Kane - Redirect   2033

1   THE COURT: -- the motion in limine, but it's

2   good that we sort of set the parameters for both sides.

3   MR. LUMISH: Thank you, Your Honor.

4   MR. GUZIOR: Thank you, Your Honor.

5   MR. LUMISH: I'll lead him on the issue.

6   (The following was in open court:)

7   MR. LUMISH: May I proceed, Your Honor?

8   THE COURT: Yes, please.

9   BY MR. LUMISH:

10   Q   So without getting into the technical details, sir, I

11   just want to make sure your last answer, we understand

12   what you're saying. Was the -- was the reason that this

13   testimony has changed and the --

14   MR. LUMISH: Thank you, Mr. Schmoller.

15   BY MR. LUMISH:

16   Q   -- and that the reason you haven't removed SONAR/BASH

17   from the software now is because it's decayed?

18   A   That's -- that's one of the -- well, yes, that's --

19   it has decayed.

20   MR. LUMISH: Can we have page 151 from his

21   deposition, please, Mr. Schmoller? And going down

22   until -- so starting at line 22 and going to page 152,

23   line 2.

24   BY MR. LUMISH:

25   Q   Mr. Guzior asked you about this question and answer,

David Kane - Redirect   2034

1   sir.

2   The question was, "I see. During that

3   evaluation by the decision tree, is the process still

4   running?"

5   "ANSWER: In the technical sense, the process is

6   loading and running and happy, but the code is currently

7   in the BASH model or the CPU pointer is inside the BASH

8   module."

9   What do you mean by "the CPU code pointer is

10 inside the BASH module"?

11 A   So the program has its bytes and memory that its

12 code --

13   THE COURT: I must be really very hard of

14 hearing.

15   THE WITNESS: I'm sorry.

16   THE COURT: I say this multiple times every

17 witness, and it's me, but I am going to ask you to speak

18 up. I'm sorry.

19   THE WITNESS: I'm sorry.

20 A   The program in memory has its own code, its own code

21 bytes somewhere. BASH models have its code bytes

22 somewhere in the kernel, and when the CPU is running code,

23 it has a little pointer that points to what code it's

24 running at the moment.

25   So without a picture, it's hard to show, but

David Kane - Redirect   2035

 1 when the program makes an operating system call, the code

 2 pointer in the CPU starts running operating system code.

 3 If it ends up in a notification to the BASH component, the

 4 code pointer ends up pointing into BASH code in its model.

 5 Q   All right. And when you say, "But the code is

 6 currently in the BASH module or the CPU code pointer is

 7 inside the BASH module," are you saying that the program

 8 that SONAR/BASH is monitoring is running inside of

 9 SONAR/BASH?

10 A   No. I was clarifying "the code is currently in."

11   THE COURT: The code is what? I'm sorry.

12   THE WITNESS: I was clarifying the prior, "But

13 the code is currently in the BASH module." And I

14 corrected myself to say, "Or the CPU code pointer is

15 inside the BASH module."

16 BY MR. LUMISH:

17 Q   So let's make sure our record is clear, though.

18 Let's imagine SONAR/BASH is monitoring Minecraft, which is

19 an example I've used in this case, the video game. Is

20 Minecraft running in SONAR/BASH?

21 A   No.

22 Q   Counsel for Columbia asked you questions about

23 whether you had opinions on infringement. Are you trained

24 in patent law, sir?

25 A   No.

David Kane - Redirect   2036

1 Q   Do you have any legal degrees?

2 A   No.

3 Q   Have you ever been trained in construing patent

4 claims?

5 A   No.

6 Q   Do you have any understanding of the law that goes

7 into establishing whether there's infringement or

8 noninfringement, including literal or by the doctrine of

9 equivalents?

10 A   Not at all.

11 Q   You were asked some questions about Mr. Pereira's

12 testimony about models. Do you recall that in general?

13 A   Yes.

14 Q   And one of the things that Columbia asked you was

15 whether -- withdraw.

16   One of the things he talked to you about from

17 Mr. Pereira was his testimony about counting function

18 calls. Do you recall that?

19 A   Yes.

20 Q   Do the submissions in SONAR/BASH count function

21 calls?

22 A   No.

23 Q   Is there any representation of the decision tree in

24 the SONAR/BASH submissions?

25 A   No.

David Kane - Redirect   2037

1 Q   Did any of the questions or answers that you were

2 asked about that version of a model, the IEEE dictionary

3 and so forth, change your views as to whether technically

4 SONAR/BASH submissions are models?

5   MR. GUZIOR: Objection.

6   THE COURT: What's the objection?

7   MR. GUZIOR: He's gone well beyond the

8 stipulation about using this witness as an expert. He's

9 now fully converting this lay witness who says he doesn't

10 have sophisticated training in these topics into an

11 expert.

12   MR. LUMISH: Would you like a response?

13   THE COURT: Yes.

14   MR. LUMISH: I'm not asking about the claim

15 language. I'm asking to follow up on Mr. Guzior's many

16 questions about whether things are models under IEEE and

17 plain, ordinary meaning.

18   MR. GUZIOR: My question was only after

19 Mr. Lumish got into it on direct, had he seen that

20 definition before. He said no. I didn't ask him to apply

21 it.

22   MR. LUMISH: Your Honor, the pending question is

23 just has he changed his mind.

24   THE COURT: I know. I'm going to allow it.

25   MR. GUZIOR: Thank you, Your Honor.

David Kane - Redirect   2038

1 BY MR. LUMISH:

2 Q   So I'll ask it again for you, sir. Did any of the

3 questions that you were asked by Mr. Guzior or any of the

4 answers you gave, including related to the dictionaries

5 and other things related to the meaning of model, change

6 your view technically as to whether SONAR/BASH submissions

7 are models?

8 A   No, it didn't change.

9 Q   And did any of those things change your view

10 technically as to whether the SONAR/BASH decision tree is

11 a combined model?

12 A   No.

13   MR. LUMISH: Mr. Schmoller, may I have PX-236 on

14 the screen, please?

15 BY MR. LUMISH:

16 Q   You recall being asked questions about this at the

17 end of Mr. Guzior's cross-examination, sir?

18 A   Yes.

19 Q   Had you ever seen this document before that exam?

20 A   Nope.

21 Q   Did Mr. Guzior show you anything in this document

22 that says anything about SONAR or BASH?

23 A   No.

24 Q   I'm going to see if we can try something here.

25   MR. LUMISH: Mr. Schmoller, are you able to

David Kane - Redirect   2039

1 keyword search this document? Will you try that for me

2 and keyword search the word SONAR?

3 BY MR. LUMISH:

4 Q   There's no hits. Do you see that, sir?

5 A   Yes.

6 Q   Did Mr. Guzior tell you that this document ever

7 mentioned SONAR?

8 A   He didn't tell me that.

9   MR. LUMISH: Will you keyword search the word

10 BASH for me, please, Mr. Schmoller?

11 BY MR. LUMISH:

12 Q   How many hits do you see there?

13 A   Still zero.

14 Q   Did Mr. Guzior tell you that this document never

15 mentions BASH?

16 A   He didn't tell me that.

17   MR. LUMISH: Let's keyword search the word tree,

18 please.

19 BY MR. LUMISH:

20 Q   How many hits do you see, sir?

21 A   Zero.

22 Q   And did Mr. Guzior tell you that this document never

23 mentions a tree?

24 A   He didn't tell me that.

25   MR. LUMISH: Let's try submission.

 1 BY MR. LUMISH:

 2 Q   How many hits do you see, sir?

 3 A   Zero.

 4 Q   Did Mr. Guzior tell you that this document never

 5 mentions submissions?

 6 A   He did not.

 7 Q   Mr. Bromwich is featured there in the video and the

 8 picture. Can you tell us who he is? What's his role in

 9 the company?

10 A   He's the vice president of engineering, my boss or

11 indirect boss.

12 Q   As a vice president of engineering, do you know what

13 products and technology he oversees in the company?

14 A   Yeah.

15 Q   And what is it?

16 A   Pretty much every product. All product development

17 for enterprise is under him.

18 Q   Is he focused on SONAR/BASH?

19 A   No.

20 Q   Does he know more about SONAR/BASH than you do?

21 A   Nope.

22   MR. LUMISH: Can you go to PX-236, page 3 for

23 me, please, Mr. Schmoller?

24 BY MR. LUMISH:

25 Q   So this is -- I'd like to find the text that you were

David Kane - Redirect   2041

1   asked about.

2   A   Paragraph 4.

3   Q   Yes.   Thank you.   Paragraph 4, "One of the key

4   techniques" is the beginning of the paragraph.

5   THE COURT: I'm sorry.   Got it.

6   MR. LUMISH: So we're at PX-236, page 3,

7   Your Honor.   Fourth paragraph down.

8   BY MR. LUMISH:

9   Q   And the part that was obviously focused upon is the

10 third sentence, which says, "We add some magic through

11 proprietary ensembling techniques that allow our systems

12 to learn how best to combine predictions from many

13 different models."   Do you see that?

14 A   Yes.

15 Q   Does it say anything about SONAR/BASH?

16 A   No.

17 Q   Do you believe this to be referencing SONAR/BASH's

18 decision tree?

19 A   No.

20 Q   Do you think Mr. Bromwich here is saying that

21 SONAR/BASH's decision tree is a combined model made up of

22 multiple models from different computers?

23   MR. GUZIOR: Objection, Your Honor.   Foundation.

24 He said that he hadn't talked to Mr. Bromwich about the

25 article.   How can this witness testify about what

David Kane - Redirect   2042

 1 Mr. Bromwich meant?

 2   THE COURT: What is the foundation?

 3   MR. LUMISH: The same foundation that counsel

 4 had in asking about this document he's never seen and what

 5 Mr. Bromwich said in the video that he'd never seen. I'm

 6 just --

 7   MR. GUZIOR: I didn't -- sorry. Excuse me.

 8   MR. LUMISH: Thank you. I'm just trying to

 9 follow up on those questions, Your Honor. So if there's

10 no foundation -- I don't disagree, but I think it's fair

11 redirect since he was asked about it on cross.

12   MR. GUZIOR: Your Honor, I never asked the

13 witness about what the author, his boss, meant, which is

14 the question that my colleague is asking.

15   THE COURT: What did you ask?

16   MR. GUZIOR: I asked him if he spoke to

17 Mr. Bromwich about this document. We went through the

18 behavioral as a reference to SONAR. We went through the

19 static attributes and dynamic behaviors are included in

20 decision trees. And then I asked him to read this

21 statement into the record because it's an admission of

22 party opponent.

23   I didn't ask this witness for something he can't

24 talk about, which is what Mr. Bromwich meant, and

25 Mr. Lumish could have brought Mr. Bromwich to testify if

David Kane - Redirect   2043

 1 they wanted that.

 2   THE COURT: I have to agree. It's not open on

 3 direct.

 4   MR. LUMISH: I'll move on, Your Honor.

 5 Understood.

 6   MR. GUZIOR: Thank you, Your Honor.

 7 BY MR. LUMISH:

 8 Q   Let me end here with you, Mr. Kane. Did Columbia's

 9 lawyers show you any evidence to establish that the

10 program being monitored by SONAR/BASH is executed in

11 SONAR/BASH?

12 A   No.

13 Q   Did Columbia's counsel show you any evidence to show

14 you that the SONAR/BASH decision tree is a combined model

15 from multiple other models?

16 A   No.

17 Q   And did Columbia's counsel show you any evidence to

18 show you that SONAR/BASH notifies other Norton customers

19 using SONAR/BASH about anomalous function calls?

20 A   No.

21 Q   Sir, I very much appreciate you being here. Thank

22 you to you and to Broadcom for allowing that happen. I

23 know you've been here a long time.

24   MR. LUMISH: Your Honor, no further questions

25 for this witness.

David Kane - Redirect   2044

1   THE COURT: May this witness be excused?

2   MR. LUMISH: Certainly from Norton's

3   perspective, yes, Your Honor.

4   MR. GUZIOR: Yes, Your Honor.   Thank you.

5   THE COURT: All right.   Mr. Kane, you can be

6   excused.   We appreciate your time and your testimony.

7   Thank you.

8   (Witness stood aside.)

9   MR. LUMISH: Did you want us to call our next

10   witness or are we breaking for lunch?

11   THE COURT: We're going to break for lunch.

12   So we will come back, I will say, at 2:00 just

13   to -- if we have matters to take up, that will give us a

14   little time to do that.   All right.   So take a lunch break

15   until 2.

16   (The jury exited the courtroom.)

17   THE COURT: All right.   I may need a few minutes

18   at least with respect to the first issue.   Let's try

19   1:15 and then if we have time for the other one -- or I

20   can do 1:30.   Let's do 1:30, and I -- that might be give

21   me time to finish up on the other one.   Okay?

22   So we'll take a recess, and I will see you all

23   at 1:30.

24   (Recess taken at 12:50 p.m.)

25   (The transcript continues on the next page.)

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1   (The trial resumes at 1:49 p.m.)

2   THE COURT: All right. So I'm prepared to

3   talk to the objection with respect to Dr. Jaeger, not

4   yet about Dr. Nielson or Mr. Nielson, but I'm going to

5   give you enough that if you disagree with my opinion,

6   you'll have a basis to do so.

7   So in this objection, Columbia is objecting

8   to Slides 9, 14, 17, and 34 of Dr. Jaeger's

9   demonstratives.

10   Slide 9 recounts a specific embodiment of

11   "Notification of An Application Community," within the

12   '322 Patent. Slide 9 specifically cites to PX-831,

13   which is the '322 Patent, at page 25, and quotes the

14   following language:

15   "The application community member that

16   detects or predicts the fault may notify the other

17   application community members." Columbia claims that

18   this slide constitutes improper claim construction of

19   the phrase "notifying the application community." The

20   Court has construed the phrase "application

21   community," but not the phrase "notifying the

22   application community."

23   Norton contends it is merely attempting to

24   offer this as one nonexclusive example of how the

25   patent would notify the application community.

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1   Slides 14 and 17 recount specific embodiments

2   of emulators within the '322 Patent.

3   Slide 14 cites again to the '322 Patent,

4   PX-831, page 18. The slide recounts the following

5   language:

6   "For example, selective transactional

7   emulation (STEM), which is described below and which

8   permits the selective execution of certain parts or

9   all of a program inside an instruction level emulator,

10   using the Valgrind emulator, by modifying a program's

11   binary or source code to include indicators of what

12   function calls are being made (and any other suitable

13   related information), or using any other suitable

14   technique."

15   Slide 17 cites also to the '322 Patent at

16   page 23. It cites the following passage: "Upon

17   entering the vulnerable section of the application's

18   code, the instruction-level emulator can capture and

19   store the program state and process all instructions,

20   including function calls, inside the area designated

21   for emulation."

22   Columbia claims that each of these slides, 14

23   and 17, improperly construe the term "emulator" rather

24   than properly interpreting an unconstrued term

25   according to its plain and ordinary meaning, which

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1 | experts may do at trial.

2 | Norton, again, contends that it seeks only to

3 | offer the specific embodiments of an emulator as

4 | examples of what an emulator may do but that it does

5 | not seek to offer these examples to suggest that the

6 | term "emulator" should be construed to refer to only

7 | these examples.

8 | As to Slide 34, Columbia argues that this

9 | constitutes improper claim construction of the term

10 | "model." The Court has not construed the individual

11 | term "model," although it has construed the phrase

12 | "model of function calls."

13 | Slide 34 cites, again, to the '322 Patent,

14 | but at page 20 it quotes the following language:

15 | "Presuming that an older model has been computed from

16 | older data during some training epoch, a new model may

17 | be computed concurrently with a new epoch in which the

18 | old model is used to detect anomalous behavior. Once

19 | a new model is computed, the old model may be retired

20 | or expunged and replaced by the new model.

21 | Alternatively, for example, multiple models, such as

22 | described above, may be combined." That's the end of

23 | the quote.

24 | Norton argues that the term "model" is

25 | unconstrued and that Dr. Jaeger is merely opining on

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1   the plain and ordinary meaning of the term "model."

2   Now, I was presented with three cases, which

3   I reviewed in *D&M Holdings*, 2018, Westlaw 734649 at

4   star 1, "the Court held in part that citing the

5   speculation of a patent to support an expert's opinion

6   was claim construction."

7   Also, and perhaps more strongly, in *EMC*

8   *Corp.*, 2016, Westlaw 775742 at star 4, the Court held

9   that "testimony that embodiments in a patent

10   specification support an expert's opinion regarding

11   the plain and ordinary meaning of claim terms would

12   amount to claim construction."

13   And, finally, in *Media Tek*, T-E-K, 2014,

14   Westlaw 971765 at star 5, the Court noted that the

15   expert "relied heavily on," among other things, which

16   is not quoted, "specifications to explain and expound

17   upon a specific meaning and/or requirements of the

18   terms identified." That is directly from the case.

19   The Court there likewise held that this constituted

20   claim construction.

21   So I'm making the finding that these slides

22   are ultimately offered for claim construction

23   purposes. What Norton is trying to do with these

24   slides, essentially, with respect to the term

25   "emulator" is restrict the jury's understanding of the

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1   construed term "emulator" by offering narrow examples

2   or embodiments of "emulator" as articulated in the

3   '322 Patent.   It amounts to claim construction, and I

4   am persuaded by the law that has been placed in front

5   of me as to why it shouldn't happen.

6   And with respect to the unconstrued term

7   "model," and Norton is still, again, trying to point

8   to a specific example of a model within the '322

9   Patent to define the term that just doesn't go to the

10   plain and ordinary meaning of the term.   It's turning

11   to the patent.   And that functionally amounts to claim

12   construction.

13   And so Norton is doing the same thing on

14   Slide 9 with respect to the phrase "notifying an

15   application community."

16   With respect to the *Daubert* ruling that I

17   made and Norton's effort to place information before

18   the jury, Norton has argued that in my *Daubert* opinion

19   addressing Dr. Jaeger, I rejected Columbia's

20   contentions with respect to Dr. Jaeger's testimony

21   about the phrase "in the emulator."

22   Dr. Jaeger -- excuse me.   I'm sorry.   I lost

23   my place.   In that opinion, among other things, I held

24   that Dr. Jaeger can opine on the word "in" in the

25   phrase "in the emulator."   But there I simply held

2050

1   that the term "in" was not part of the construed term

2   "emulator," and, thus, that Dr. Jaeger's testimony

3   about the term "in" was not improper claim

4   construction, but the clear upshot of that decision

5   was that Dr. Jaeger can testify as to the unconstrued

6   terms, such as "in," in accordance with their ordinary

7   meaning.

8   And, essentially, that is not what would

9   happen here if I allowed these slides in. With the

10 slides, Norton is essentially trying to limit the

11 jury's understanding or would risk limiting the jury's

12 understanding, which would confuse the issues and

13 perhaps -- which goes to understanding the terms of

14 notifying an application community, and emulator, and

15 model. By offering these specific examples recounted

16 in the patent, I think that it would mislead the jury

17 and confuse the jury as to specific issues on which

18 they're supposed to reach their decision. And so I'm

19 going to exclude Slides 9, 14, 17, and 34 of his

20 demonstratives.

21   All right. So you have that on the record.

22 We are starting in just about 10 minutes. I'm going

23 to leave and allow you all to get ready to go. And at

24 the next break, or before Dr. Nielson testifies, I'll

25 issue a ruling, which will, again, give you enough

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1   that you'll have a record about what I'm finding one

2   way or the other, but I haven't finished preparing

3   that.

4   So we'll take a recess until 2:10.

5   (Recess taken from 2:00 p.m. until 2:10 p.m.)

6   THE COURT: So you all are prepared to start?

7   MR. PATHMANABAN: Yes, Your Honor.

8   THE COURT: All right. So we'll bring the

9   jury in, please.

10   (The jury entered the courtroom.)

11   MR. PATHMANABAN: Your Honor, may I hand

12   out -- I guess we'll wait for the witness first.

13   THE COURT: Yeah.

14   (The jury is present in the courtroom at 2:14

15   p.m.)

16   (Binders are handed up to the Court.)

17   THE COURT: Thank you.

18   All right. So are you prepared to call your

19   next witness?

20   MR. PATHMANABAN: We are, Your Honor. Norton

21   calls Dr. Trent Jaeger.

22   THE COURT: All right.

23   TRENT JAEGER, called by the Defendant, first being

24   duly sworn, testified as follows:

25   MR. PATHMANABAN: May I begin?

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1   THE COURT: Sir, if you can place your name

2   on the record and introduce yourself to the jury,

3   please.

4   MR. PATHMANABAN: Thank you, Your Honor. My

5   name is Giri Pathmanaban.

6   DIRECT EXAMINATION

7   BY MR. PATHMANABAN:

8   Q   Good afternoon, Dr. Jaeger.

9   A   Good afternoon.

10 Q   Can you please state your full name for the

11 record?

12 A   My full name is Trent Jaeger, pronounced with a

13 hard J, J-A-E-G-E-R.

14 Q   Dr. Jaeger, where do you currently work?

15 A   I'm currently a professor of computer science and

16 engineering at the Pennsylvania State University, Penn

17 State.

18 Q   Can you please tell the jury why you are here

19 today?

20 A   I'm here to discuss my opinions of

21 non-infringement by the Norton products on the '322

22 and '115 Patents.

23 Q   Dr. Jaeger, can you tell us briefly about where

24 you live and a little bit about your family?

25 A   Sure. I live in a town in central Pennsylvania

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1 near Penn State, naturally, called Port Matilda. I

2 live there with my wife of 33 years, Dana. She's the

3 stable -- the rock, as it were.

4   We have two sons. We're empty nesters now, but we

5 have two sons, age 31 and 28. They're getting on with

6 their lives and all of that, but they're still fun to

7 hang around with, and I'm proud of them.

8 Q   Dr. Jaeger, did you help us prepare some slides to

9 help with your testimony today?

10 A   I did, yes.

11   MR. PATHMANABAN: Can we pull those up,

12 please, Mr. Schmoller?

13 BY MR. PATHMANABAN:

14 Q   Are these the slides that you're looking at on the

15 screen?

16 A   They are, yes.

17 Q   Let's talk a little bit about your credentials,

18 Dr. Jaeger. Can you tell us about your educational

19 background?

20 A   Sure. I have a Bachelor's degree in chemical

21 engineering from Cal Poly Pomona. And after working

22 for a little bit, I went back to graduate school, and

23 I got a Master's and Ph.D. in computer science and

24 engineering from the University of Michigan.

25 Q   And during your Ph.D., did you specialize in

1 computer security at all?

2 A   I did, yes. I started in artificial intelligence,

3 but about halfway through my Ph.D., an interesting

4 computer security problem appeared in our lab that we

5 wanted to tackle, and so I switched to problems on

6 computer security. And so I've mainly been focusing

7 on that topic since.

8   THE COURT: Can I just make sure that

9 everybody can hear Dr. Jaeger. Yes?

10   THE WITNESS: A little louder would be okay?

11   THE COURT: I think yes. Through the

12 microphone is certainly how my court reporter hears

13 you. And I think it just carries further, if you

14 don't mind.

15   THE WITNESS: Let me know, and I'll do my

16 best, Your Honor.

17   THE COURT: Unfortunately, I probably will.

18 BY MR. PATHMANABAN:

19 Q   Dr. Jaeger, what was your thesis in during your

20 Ph.D.?

21 A   My Ph.D. thesis was about addressing the problem

22 that was emerging in the mid '90s where programs like

23 email attachments were being extended with the ability

24 to have code embedded in them, and then these programs

25 could be downloaded to your own computers and then run

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1   on your computer.

2   And so a question we were examining about how do

3   we develop techniques to limit what those programs can

4   do on your computer to try to restrict them to do

5   less -- to have the ability to do less potential

6   damage than regular programs that you would have

7   normally run.

8   Q   What did you do after you got your Ph.D.?

9   A   After I got my Ph.D. I went to work for IBM

10   Research at the T.J. Watson Research Center in New

11   York from 1996 to 2005.

12   Q   What were you doing at IBM?

13   A   At IBM I was looking at security research

14   problems, mostly at the operating system level. At

15   one point later in my career, I worked on the Linux

16   operating system which is one of the major operating

17   systems for server computers now.

18   Q   What did you do after you left IBM in 2005?

19   A   After I left IBM in 2005, I went to Penn State

20   where I am now.

21   Q   You went to Penn State as a professor?

22   A   I went officially as an associate professor but

23   became a professor later.

24   Q   At Penn State, do you teach classes in computer

25   security?

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1   A   I haven't keep specific track, but probably about

2   three-quarters of the classes I teach are computer

3   security classes, and then I'll teach some operating

4   system and other software classes.

5   Q   Do you teach both undergraduate and graduate

6   students?

7   A   I do.

8   Q   Have you published any papers on computer

9   security?

10 A   I have, yes. I have over 150 what are called peer

11 reviewed or referred papers that committees review

12 before they're published. Most of them are related to

13 computer security.

14 Q   Dr. Jaeger, do you hold any other current

15 positions?

16 A   I serve the research community, and there are a

17 couple listed here. I've served as a member of the

18 Computer Security Research community, to be more

19 specific. Currently I'm associate editor-in-chief of

20 the IEEE Security & Privacy Magazine which is a

21 widely-read magazine about research and computer

22 security. And recently I was the steering committee

23 chair for this Network and Distributed Systems

24 Security Symposium, which there are four major

25 conferences related to computer security research, and

TRENT JAEGER - DIRECT   2057

1 this is one of the four, and the steering committee

2 makes the decisions about pretty much everything with

3 respect to the conference.

4 Q   Have you been recognized in the field?

5 A   I have, yes. In 2020, my peers in the ACM, which

6 is Association of Computing Machinery, and then

7 there's a special interest group in security which is

8 called SIGSAC, S-I-G-S-A-C. They are one of the two

9 major research organizations for computer security,

10 and they awarded me, I guess for lack of a better

11 word, this outstanding contributions award in

12 2020, and I am proud of this award because it covers

13 both my research contributions and my teaching

14 contributions related to writing a book on operating

15 systems security and the service contributions such as

16 the ones I mentioned.

17 Q   You mentioned your research. Have you received

18 grant money for your research?

19 A   I have, yes.

20 Q   Approximately how much have you received over your

21 career?

22 A   Well, I've been on teams that have been awarded

23 grants totaling over $65 million in funding. And one

24 project in particular, they call it consortium league

25 officially, but I'm the lead -- you may remember the

1 term P.I. from some of the earlier discussions. I'm

2 the principal investigator. I am the lead principal

3 investigator of this army research lab project which

4 is a five-year project that's funded at $22 million.

5 There are about 20 different P.I.s on the project.

6 Q   So you received approximately over 65 million in

7 funding for your research overall?

8 A   The teams I have been on have received that, yes.

9 Q   How long have you been familiar with Norton or

10 what was previously Symantec?

11 A   I think, you know, going back to when I was

12 working on my Ph.D., I remember hearing about Norton

13 and Norton AntiVirus and these sorts of products, and

14 Symantec. So certainly by the time I started working

15 at IBM Research this was familiar to me.

16 Q   As part of your grants, do you receive grants from

17 industry as well?

18 A   I do, yes.

19 Q   Have you received grants from Symantec?

20 A   I received one grant from Symantec. I had a

21 student who interned at Symantec for a summer. He was

22 a very good student, and they liked him. They wanted

23 to hire him. So they made a grant in the amount to

24 fund the student for a year, his salary, benefits, and

25 tuition. And then later he was hired by Symantec

1 after he graduated.

2 Q   Dr. Jaeger, have you received any patents? Are

3 you a named inventor on patents?

4 A   I have, yes.

5 Q   How many patents do you have?

6 A   I believe I have 21 patents.

7 Q   And are any of these related to computer security?

8 A   Probably three-quarters at least.

9   MR. PATHMANABAN: Your Honor, at this time

10 we'd like to tender Dr. Jaeger as an expert in

11 computer and network security.

12   MR. GUZIOR: No objection from Columbia, Your

13 Honor.

14   THE COURT: All right. He'll be deemed an

15 expert in computer and network security.

16   MR. PATHMANABAN: Thank you, Your Honor.

17 BY MR. PATHMANABAN:

18 Q   Dr. Jaeger, at a high level, can you explain what

19 you'll be testifying about today?

20 A   I'll be testifying about the fact -- well, I'll be

21 testifying about my opinion that the accused Norton

22 products do not infringe on the asserted claims of the

23 '322 and '115 Patents.

24 Q   And in rendering those opinions, from whose

25 perspective -- what perspective did you use to come to

TRENT JAEGER - DIRECT   2060

1 your opinions that Norton products did not -- do not

2 infringe the '115 and '322 Patents?

3 A   The perspective that I'm using is a perspective of

4 a person of skill in the art at the time of the

5 patents.

6 Q   What do you consider to be a person of ordinary

7 skill in the art at the time of the '115 and '322

8 Patents?

9 A   As it says on the screen, a person of skill in the

10 art is one with at least a Bachelor's degree in

11 computer science, computer engineering, or a similar

12 field, with two years of industry experience relating

13 to computer security, or Master's degree in computer

14 science, computer engineering, or a similar field.

15 Q   At the time of the '115 and '322 Patents, were you

16 a person of skill in the art using this definition of

17 that term?

18 A   I was, yes.

19 Q   In rendering your opinions, can you tell us about

20 what materials you looked at to come to your opinions

21 that Norton products do not infringe?

22 A   Sure. I looked at production documents. I looked

23 at source code. I looked at deposition transcripts.

24 I had some discussions with David Kane, who you met

25 earlier. I looked at public documents, other case

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1 materials, claim construction orders from the Court,

2 and, of course, the Columbia patents.

3 Q   So you've reviewed the source code for the Norton

4 accused products?

5 A   Yes, I have.

6 Q   And documents related to Norton's products?

7 A   Yes, indeed.

8 Q   And, Dr. Jaeger, did you review and analyze

9 Columbia's '322 and '115 Patents which are PX-830 and

10 PX-831, respectively?

11 A   I did, yes.

12 Q   Can you tell us what those patents are about

13 generally?

14 A   Generally, these patents describe a specific

15 technique for using behavioral analysis to try to find

16 attacks or malicious behavior on a program.

17 Q   Can you generally describe how the Columbia

18 patents achieve behavioral security?

19 A   Sure. So I highlighted a few key things here on

20 this slide. One important facet that is discussed in

21 the asserted claims is that the program must be

22 executed in an emulator.

23   The second thing is that the program must perform

24 a function call in the emulator. And then there is a

25 comparison of that function call that was performed in

1   the emulator to a combined model, and this combined

2   model must be a model created from two or more models

3   on different computers.

4   Q   Dr. Jaeger, does this Slide 9 of your

5   demonstrative summarize your opinions as to why

6   Norton's products do not infringe?

7   A   It does, yes.

8   Q   Before you summarize your non-infringement

9   opinions, can you tell us what your understanding is

10   of what Columbia must show to prove infringement?

11   A   My understanding is to prove infringement,

12   Columbia must show that the accused products practice

13   each and every limitation of an individual claim for

14   one claim -- they must do it for all the claims to

15   prove all of them are infringed by the accused

16   products.

17   Q   And what if even one element is missing from the

18   accused products?

19   A   So if there is an element that I find or is found

20   not to be practiced by the accused products, then the

21   accused products do not infringe on the patents.

22   Q   And in your opinion, are there elements of the

23   claims that are not present in Norton's accused

24   products?

25   A   I found three elements that are not found in the

TRENT JAEGER - DIRECT   2063

1   accused products.

2   Q   What are they?

3   A   Excuse me.

4   THE COURT: What are you looking for, sir?

5   THE WITNESS: Water, I guess.

6   THE COURT: Oh, I'm sorry. We usually have

7   it right up there.

8   Mr. Carr, do you mind putting another one up

9   there so he has a backup. Thank you.

10 A   All right. So I will refer to these three

11 elements as the "in an emulator" element, "combined

12 model" element, and the "notifying an application

13 community" element.

14 Q   Can we discuss each one in turn?

15 A   We can.

16 Q   So let's start with your opinion that Norton's

17 products do not execute programs or function calls in

18 an emulator. And on Slide 11, are you -- are we

19 looking at Claim 2 of the '322 Patent?

20 A   We are, yes.

21 Q   And looking at Claim 2, what does the claim

22 require with respect to executing a program in an

23 emulator?

24 A   So the spec has two parts that refer to in an

25 emulator. The first requires that executing at least

TRENT JAEGER - DIRECT   2064

1   a portion of a program in an emulator.

2   Q   I'm sorry. I think you may have -- did you say

3   the spec has or the claim has?

4   A   I'm sorry, claim.

5   Q   And what's the second part?

6   A   And the claim, sorry, says that a function call

7   must be -- sorry -- "a function call made in the

8   emulator."

9   Q   So what does this claim language require?

10 A   This claim language requires what it says,

11 executing a program, at least a portion of a program,

12 in an emulator. And then when the program makes a

13 function call, that function call must be made in the

14 emulator, the same emulator.

15 Q   Has the Court construed the term "emulator"?

16 A   It has, yes.

17 Q   What is the Court's construction of that term?

18 A   The Court's construed emulator to mean "Software,

19 alone or in combination with hardware, that permits

20 the monitoring and selective execution of certain

21 part, or all, of a program."

22 Q   Did you consider the Court's claim construction in

23 your analysis?

24 A   I did, yes.

25 Q   Have you prepared a graphic to explain how a

1 program executes and makes a function call in an

2 emulator?

3 A   I have, yes.

4 Q   Can you explain what this is showing on the left,

5 starting with the left?

6 A   Sure. So on the left, we have a program, and this

7 is meant to be an image that's displaying how the

8 program would run normally. So here we have this

9 Minecraft program that you may have been familiar with

10 from earlier discussions, and then the black lines

11 refer, for example, to instructions, instruction code

12 in that program, and then we've highlighted here the

13 blue lines, and these are associated with function

14 calls. So these are specific kinds of instructions

15 that the Minecraft program will have. And the yellow

16 one is one that's of interest potentially.

17 Q   Are you showing an emulator on the right of Slide

18 13?

19 A   Yes. So I have sort of an icon to represent an

20 emulator, but it's just an icon.

21 Q   So how do you execute a program in an emulator?

22 A   So when a program is executed in an emulator, the

23 program is basically -- sorry. The emulator is a

24 component that now is going to take control of the

25 execution of the program. And so the patent

TRENT JAEGER - DIRECT   2066

1 specification talks about a specific example where

2 there's what's called an instruction level --

3   MR. GUZIOR: Objection, Your Honor. This is

4 exactly what you just excluded.

5   THE COURT: It's sustained.

6 BY MR. PATHMANABAN:

7 Q   Without reference to the specification, just give

8 an example of how a program might execute in an

9 emulator.

10 A   Okay. So one example of an emulator is an

11 instruction-level emulator. And in an

12 instruction-level emulator --

13   MR. GUZIOR: Objection, Your Honor. Now he's

14 just using the exact word from the specification, but

15 there's a preface that it's not from the

16 specification. I thought we had a ruling on this.

17   THE COURT: I have to sustain that.

18   MR. PATHMANABAN: I'll move on, Your Honor.

19 BY MR. PATHMANABAN:

20 Q   I want to turn to Norton's products. Were you

21 here for Dr. Bailey's testimony?

22 A   I was, yes.

23 Q   I'm showing you a trial transcript from

24 Dr. Bailey's testimony. Can you read the Q and A on

25 top, please, starting with the question?

1   A   So the second line from the top?

2   Q   Correct.

3   A   The transcript says, "Does BASH monitor function

4   calls?" And the answer is, "It does."

5   Q   And what does the second Q and A say?

6   A   The second question is "Does BASH permit selective

7   execution of a running program?" And the answer is,

8   "It does."

9   Q   Can you remind us what the Court's construction of

10   "emulator" required?

11   A   The Court's construction of "emulator" requires

12   monitoring and selective execution.

13   Q   So in your opinion, what is the alleged emulator

14   that permits monitoring and selective execution of a

15   program in Norton's products?

16   A   The alleged emulator corresponds to the SONAR/BASH

17   component.

18   Q   Have you prepared a graphic to show how SONAR/BASH

19   works?

20   A   I have, yes.

21   Q   Can you explain what we're looking at?

22   A   Yes. So here we have our Minecraft program again.

23   If you recall, the black lines are instructions, and

24   then the blue lines are function calls, and there may

25   be a function call executed that SONAR/BASH will use

1 its user mode hooking to divert to the SONAR/BASH

2 component. And that function call may be compared to

3 the decision tree there inside the SONAR/BASH

4 component to determine whether the function call is

5 good or bad.

6   MR. PATHMANABAN: Mr. Schmoller, can you pull

7 up PX-471, please.

8 Q   And if you can go to the second page, please.

9 A   Yes.

10 Q   Dr. Jaeger, were you here when Dr. Bailey

11 testified about PX-471?

12 A   I was, yes.

13 Q   Can you tell us briefly what this document is?

14 A   This document is architectural overview discussion

15 of BASH.

16 Q   Architectural overview of BASH?

17 A   Yes.

18   MR. PATHMANABAN: Mr. Schmoller, can you pull

19 up on page 3 of PX-471?

20 BY MR. PATHMANABAN:

21 Q   Do you see on the left there's a column titled

22 "How Does It Work"?

23 A   Yes.

24 Q   And can you read for the record what the first

25 bullet says on the right?

1 A   First bullet says "BASH inserts hooks into the

2 windows kernel as well as user-mode" --

3   THE COURT: Sir, this is -- because you're

4 looking at the screen --

5   THE WITNESS: Yeah, yeah.

6   THE COURT: And everybody also when they read

7 something written, they speed up. But if you could

8 just slow down, that would be helpful.

9   THE WITNESS: Okay. I'll try to do both.

10   THE COURT: There you go.

11   THE WITNESS: Speak into the microphone and

12 go slower.

13 A   Okay. Starting again, "BASH inserts hooks into

14 the windows kernel as well as user-mode to monitor

15 file, registry, and other changes made by any process.

16 Details about these changes are stored in a local

17 database for subsequent use in the event the process

18 is detected as malicious."

19 Q   So what does that tell you about whether there's

20 any program executed in BASH?

21 A   This tells me that BASH inserts hooks to divert

22 the execution -- sorry -- to divert the execution from

23 the program to the BASH component.

24   THE COURT: To what?

25   THE WITNESS: The BASH component.

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1   THE COURT: Component.

2   BY MR. PATHMANABAN:

3   Q   And does that mean that the program is executing

4   in or outside of BASH?

5   A   The program is executing outside of BASH.

6   MR. PATHMANABAN: Mr. Schmoller, can you put

7   back the slides?

8   BY MR. PATHMANABAN:

9   Q   So does BASH compare a function call made in the

10 emulator to the decision tree?

11 A   BASH does not.

12 Q   So does that mean BASH doesn't infringe?

13 A   That would mean BASH doesn't infringe, yes.

14 Q   Is this another excerpt on Slide 17 from

15 Dr. Bailey's trial testimony?

16 A   It is, yes.

17 Q   And he was asked -- I'll read the question. "The

18 rebuttal report, you started to talk about the

19 operating environment because you realized that we

20 were pointing out, and in this case, that the program

21 does not run in UMH and does not run in SONAR/BASH,

22 right?" Can you read the answer, please?

23 A   Yes. The answer Dr. Bailey gave is "The program

24 doesn't -- I mean, SONAR/BASH is not capable of

25 simulating software. So there's no program that can

1 run in SONAR/BASH. And that's never been true."

2 Q   So how does this inform your opinion about whether

3 a program is executing within SONAR/BASH or the

4 alleged emulator?

5 A   From this answer, it appears to me that Dr. Bailey

6 agrees with me that the program does not run in

7 SONAR/BASH.

8 Q   Did Dr. Bailey offer any opinions for the -- for

9 this element as executing a program in the emulator

10 element under the doctrine of equivalents?

11 A   He did not, no.

12 Q   So does this mean, according to you, that

13 SONAR/BASH doesn't infringe?

14 A   I find that SONAR/BASH does not infringe the "in

15 an emulator" element.

16 Q   Shall we move on to your second opinion?

17 A   We can, yes.

18 Q   Can you remind us briefly what that is?

19 A   Sure. In the second part, we're going to talk

20 about how Norton's products do not create a combined

21 model using two different models created on different

22 computers.

23 Q   What does -- on Slide 20, you're showing Claim 2

24 of the '322 Patent; is that right?

25 A   Yes.

1 Q   What does the claim language you've highlighted

2 here from Claim 2 of the '332 Patent require?

3 A   I've highlighted the part of the claim language

4 that talks about "wherein the model is a combined

5 model created from at least two models created using

6 different computers."

7 Q   What were the alleged two models that were

8 combined, according to Dr. Bailey?

9   THE COURT: According to whom?

10   MR. PATHMANABAN: Dr. Bailey.

11   THE COURT: Okay.

12 A   I don't know that he said that both of them were

13 combined, but he discussed two things being models.

14 Q   Let me rephrase the question. What were the two

15 things in SONAR/BASH that Dr. Bailey discussed as

16 models?

17 A   There were two types of objects in SONAR/BASH that

18 Dr. Bailey highlighted as being model of function

19 calls. One is the BASH decision tree, and the other

20 are the BASH submissions.

21 Q   Do you agree that the BASH decision tree is a

22 model?

23 A   I believe the BASH decision tree fulfills the

24 requirements for the model of function calls part of

25 the claim language, just that part.

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1 Q   What about a BASH submission?

2 A   I don't find the BASH submission satisfies that

3 claim language, and we'll --

4   THE COURT: You know what? You're trailing

5 off.

6   THE WITNESS: Oh, okay. Sorry.

7   THE COURT: So he knows a lot of what you're

8 going to say, but we don't. So it's natural.

9   THE WITNESS: Sorry, Your Honor.

10 BY MR. PATHMANABAN:

11 Q   Let me reask the question.

12   THE COURT: That's great.

13 BY MR. PATHMANABAN:

14 Q   Is the BASH submission a model, according to you?

15 A   I find that the BASH submission does not satisfy

16 the requirements of a model of function calls.

17 Q   Has the Court construed the phrase "model of

18 function calls for the at least a part or portion of

19 the program"?

20 A   The Court has, yes.

21 Q   What is the Court's construction of that phrase?

22 A   The Court has construed that phrase to mean "model

23 of function calls created by modeling program

24 executions."

25 Q   Did you use that construction in your

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1 non-infringement analysis?

2 A   I did, yes.

3 Q   So what is the model -- what is the model that the

4 claim speaks of?

5 A   So you can see the claim is somewhat elaborate,

6 and in the middle is the phrase "the model" there

7 highlighted in red. And the model corresponds to a

8 model of function calls also highlighted in red a

9 little bit earlier. And so this claim element

10 includes two additional limitations. One, the model

11 is compared to a function call made in the emulator,

12 and the other that it's created by combining at least

13 two models of function calls.

14 Q   And have you prepared a graphic to show an example

15 of combining models of function calls?

16 A   I have, yes. So in this graphic, this is what I

17 will interpret or envision as what a demonstration of

18 what the claim language is saying.

19 Q   What are the coin-type things at the bottom?

20 A   At the bottom we have the program executions. If

21 you remember, in the claim construction, there are

22 program executions that are used in creating the model

23 of function calls.

24 Q   What those program executions being

25 (unintelligible).

1   A   Sorry. Can you repeat that?

2   Q   Yeah. The program executions, where do they go.

3   A   The program executions are, I don't know, used by

4   this computer-looking device, one on the left and one

5   on the right. They are each going to create a model

6   and, as the claim construction language says, the

7   program executions -- sorry -- I'm a little behind

8   you.

9   Q   I apologize. Go ahead.

10 A   So the program execution -- I'm sorry -- the

11 models are created by modeling the program executions.

12 So the computer is going to take the program

13 executions and apply some techniques, a

14 machine-learning algorithm, and it's going to use that

15 to create the model; one for model one, one for model

16 two. And then those two models are combined into a

17 combined model as you see here.

18 Q   Turning to SONAR/BASH, does SONAR/BASH have more

19 than one model of function calls?

20 A   SONAR/BASH just has one model of function calls.

21 Q   What is that one model?

22 A   That's the decision tree.

23 Q   Is the decision tree in SONAR/BASH created from at

24 least two models of function calls?

25 A   No, it's not.

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1 Q   Is the decision tree created using one model of

2 known good programs and one model of known bad

3 programs?

4   MR. GUZIOR: Your Honor, I have an objection.

5 The claim language does not call for a combination of

6 models of function calls. It calls for a combination

7 of models created using different computers.

8   So the testimony about whether that's models

9 of function calls is not the claim language. And I

10 think earlier Your Honor acknowledged that the Court

11 has not construed "models" as a stand-alone term.

12   MR. PATHMANABAN: Your Honor, he's not

13 testifying -- he's testifying about how SONAR/BASH

14 works.

15   THE COURT: But if he's using the claim

16 language in an inappropriate way, then he can't do it.

17 So just tell me why it's appropriate.

18   MR. PATHMANABAN: Well, the claim language is

19 pretty clear, Your Honor. It's comparing a function

20 call made in an emulator to a model of function calls

21 wherein the model is a combined model created from at

22 least two models. And his opinion, which is offered

23 in his report and today, is there are no two models

24 combined in the Norton SONAR/BASH product. That's

25 what he's testifying to.

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1   THE COURT: So what's the objection?

2   MR. GUZIOR: Your Honor, the testimony he

3 just gave is that there are no two models of function

4 calls. And the claim language is models created using

5 different computers.

6   MR. PATHMANABAN: His opinion is that there

7 are no two models that are combined, be it a model of

8 function calls or otherwise.

9   THE COURT: Well, you have to stick to the

10 language as it is in the claim to have him

11 differentiate that exact language.

12   So I'm going to be honest. I don't remember

13 what he said. So I'm not going to -- I can't really

14 rule on the objection. But let's just start fresh.

15 I'm not going to strike the testimony because I can't

16 remember, I'm embarrassed to say, but we'll just go

17 over and make sure that you stick to the language as

18 it's written in the claim.

19   MR. GUZIOR: Thank you, Your Honor.

20   MR. PATHMANABAN: Thank you, Your Honor.

21 BY MR. PATHMANABAN:

22 Q   So I'm going to reask the question. Is the

23 decision tree created using a model of known good

24 programs and a model of known bad programs?

25 A   No, it's not.

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1   Q   You referred earlier to submissions. Do you

2   recall that?

3   A   I do, yes.

4   Q   Is that what you're showing here on Slide 25?

5   A   There are submissions shown here, yes.

6   Q   Can you explain to us what a submission is?

7   A   A submission is an output of a comparison of a

8   function call -- well, it's an output of the

9   comparison made by the BASH decision tree to a

10 function call that it is evaluating. And so if it

11 implicates that that function call is either, you

12 know, is really bad or that the function call is good,

13 then a submission is generated.

14 Q   Are these submissions you describe created before

15 or after BASH decision tree has identified something

16 as good or bad?

17 A   The submissions are generated after something is

18 identified as good or bad.

19 Q   And once the submissions are created, does BASH

20 ever compare this submission to another function call

21 to see if that other function call is good or bad?

22 A   No, it doesn't.

23 Q   Let's look at some of the evidence you relied on

24 to support your opinions about the submissions and the

25 BASH decision tree.

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1   Dr. Jaeger, what are we looking at on Slide 26

2   from Exhibit DX-DJ?

3   A   So what's here is a representation of the source

4   code for the decision tree. And so you can see that

5   the way this is laid out is in kind of a cascaded

6   fashion. So what we'll have is the first line under

7   "scoring logic start" shows that there's a comparison

8   between an attribute in this case called process name

9   count to a specific value. So this has to be less

10 than one. So there's this specific comparison. If it

11 passes, we go to the next level in the decision tree.

12 If it fails, maybe the check stops or maybe it goes to

13 the false branch of the decision tree.

14   But what's important here is that in this decision

15 tree, there are a series of comparisons of various

16 values to various attributes in order to make a

17 decision whether a particular function call is good or

18 whether it's bad or whether we can't really tell yet.

19 Q   And are these -- well, let me ask, why do you say

20 that the BASH decision tree is a model?

21   THE COURT: Is?

22   MR. PATHMANABAN: Is a model.

23   THE COURT: Okay. Thank you.

24 A   So in the BASH decision tree, a critical thing is

25 that the BASH decision tree enables this comparison

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1 with a series of comparisons that you see here.

2   The first line has the less than one, for example,

3 comparison, and that indicates that the function call

4 is being compared to the model to then make this

5 judgment whether the function call is anomalous or

6 not.

7 Q   And on the slide, Slide 27, Dr. Jaeger, are you

8 showing an excerpt from Exhibit DX-CI?

9 A   Yes, I am.

10 Q   What is Exhibit DX-CI?

11 A   So this exhibit is an example of a submission.

12 And so -- go ahead.

13 Q   What information does a submission have?

14 A   The submission has -- so we're looking at the

15 right-hand part of the screen. And in the submissions

16 you have these capitalized letters. And so those are

17 associated with attributes in many cases and specific

18 values. And a submission is basically data about a

19 specific program execution.

20   THE COURT: Did you say "specific values"?

21   THE WITNESS: Specific values, yes.

22   THE COURT: Okay.

23   THE WITNESS: Or concrete values.

24 BY MR. PATHMANABAN:

25 Q   What kind of data does a submission have?

1   A   A submission has attributes and a submission has

2   values, specific value for those attributes.

3   Q   Does BASH ever use the submission to compare the

4   information on a submission to another function call?

5   A   BASH does not compare submissions to another

6   function call for any reason that I've seen.

7   Q   Dr. Jaeger, are we looking on Slide 28 of a

8   side-by-side comparison of the source code for a

9   decision tree on the left with a submission on the

10 right?

11 A   We are, yes.

12 Q   So how does this comparison inform your opinion?

13 A   So how I look at this is that the decision tree

14 enables you to make judgments. So you can think of it

15 like in weather forecasting. You may have a model to

16 try to predict whether it's going to rain or not. And

17 so that model would have attributes such as the

18 temperature, wind, barometric pressure, what have you,

19 and these attributes, their values, would be compared.

20 as we see in the decision tree -- sorry -- I'm

21 pointing to the screen in front of you that you can't

22 see -- but you can see the comparisons in the decision

23 tree for each of these attributes, and their values

24 are compared, and based on those comparisons at the

25 end. We can make a decision whether the weather is

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1 going to be good or whether it's going to rain, for

2 example.

3   Whereas on the right slide, we have the

4 submissions. And the submissions you can think of as

5 being a specific state of the weather currently. You

6 would have a specific value for the temperature, the

7 wind, the barometic pressure, and so forth.

8 Q   Dr. Jaeger, are we looking, on Slide 30, at an

9 excerpt from PX-505?

10 A   Yes, we are.

11 Q   And were you here when Mr. Kane was testifying

12 about this document?

13 A   I was, yes.

14 Q   So on page 15 of PX-505, what is it showing here?

15 A   What this figure is showing is we have on the

16 left-hand side, we have a good sample at the top, a

17 bad sample at the bottom, and on the right-hand side,

18 we have a series of these A's. And so these A's

19 correspond to attributes. And as we spoke of in the

20 submission, we have, for a sample, we have not only

21 the names of the attributes, but also -- or

22 submission, I should say -- which corresponds to a

23 sample. The attributes will not only have the

24 attributes, but we'll have the specific values of

25 these attributes for that specific sample or

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1   submission.

2   Q   So these good and bad -- so it's good sample and

3   malicious sample. What's labeled as good sample in

4   green and malicious sample in red, are these

5   submissions?

6   A   These correspond to submissions, yes. I see no

7   distinction.

8   Q   And are they subsequently used to train a model or

9   a decision tree?

10 A   The submissions, I believe, there was something

11 said about them needing to verify that the -- so if a

12 submission is rated as good, they do some work to try

13 to make sure it's really good before they use it as a

14 training data. But these submissions will be -- can

15 be used as training data.

16 Q   You've heard a lot of testimony about what

17 Mr. Pereira said in his deposition?

18 A   That's right.

19 Q   Did Mr. Pereira testify that the BASH decision

20 tree is a combination of known good and known bad

21 models?

22 A   Well, I think the testimony here that's being

23 shown shows that if that's how you take what his

24 testimony was, that that would be incorrect.

25 Q   Let me just stop you there. Are you showing an

1 excerpt from Mr. Pereira's deposition transcript?

2 A   I am, yes.

3 Q   What is he saying about the BASH decision tree

4 being -- whether it's a combination of known good

5 models or known good and bad models?

6 A   Well, he's saying here that, you know, the

7 previous assumption he's saying is incorrect because

8 that comment assumes one thing, but, in fact, we're

9 really collecting features or attributes, attributes

10 as we've been talking about, and into these known

11 buckets, so that's good or bad, and putting them into

12 this -- it says "ground-through," but it's probably

13 ground truths. So that's, as I was mentioning, that

14 they check whether the good ones are really good and

15 the bad ones are really bad in their opinion before

16 they use them for training. And then they create a

17 single tree, a single decision tree out of that.

18 Q   And, for the record, this is from Mr. Pereira's

19 deposition transcript at page 250, line 7 through 22?

20 A   That's right.

21 Q   And just to put this all in context, the question

22 that he's asked here is "Why do you combine the models

23 of normal behavior and models of malicious behavior

24 when creating your decision trees? What's the

25 thinking behind that?" Right?

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1   A   Yes, that's the question.

2   Q   And the answer he gives is "Right. So, again,

3   that comment assumes we're creating models of valids

4   and malicious, but, in fact, we're really collecting

5   features or attributes of these known buckets and

6   putting them into this ground true and creating a

7   single tree out of it." Is that what he said?

8   A   I believe so, yes.

9   Q   Let's look at another document on Slide 32. It's

10 another Norton document, PX-398. Do you recall

11 Mr. Kane testified about this document, too?

12 A   Yes, I could.

13 Q   And page 1 of PX-398, are there some definitions

14 in this document about what a tree is and what a

15 submission is?

16 A   There are, yes. So this further supports my

17 opinion. Further used in my opinion, to make this

18 distinction between a tree as potentially a model and

19 a submission not as a model, but rather as data about

20 a specific execution.

21 Q   So let's start with what it says about a tree.

22 And if you can -- it says -- the first sentence is

23 "short for decision tree," right?

24 A   That's correct.

25 Q   Can you read what it says about a decision tree

1 starting with "after the primary output of this team"?

2 A   "A decision tree is a method for classifying data

3 using statistics. The general method is that data

4 (attributes) of known examples of the classes to be

5 categorized are analyzed and a model is created (the

6 tree) which can then be used to classify unknown

7 examples."

8 Q   So it's calling a decision tree as a model?

9 A   It is, yes.

10 Q   And let's look at what it says about a submission,

11 and that's No. 5 submission on the same page. What

12 does the first sentence say there?

13 A   It says "A submission is a package of data sent to

14 us from the BASH client."

15 Q   And can you read the next sentence as well?

16 A   Sure. "It contains information about a sample and

17 that data is used to train new classifiers and

18 evaluate the performance of the existing classifier."

19 Q   How does that inform your opinion about whether a

20 submission is a model or not?

21 A   This definition of "submission" says that a

22 submission is a package of data. So this is, as I

23 said, a data about a specific program execution, a

24 single program execution, that's been implicated one

25 way or another and sent from the BASH client to

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1 Norton.

2 Q   So is it data that's sent, or is it a model?

3 A   So this is data. This is --

4 Q   And you mentioned earlier that you've reviewed

5 several Norton documents and the source code?

6 A   That's right.

7 Q   Have you seen any reference to any Norton document

8 or their source code that suggests that the submission

9 is a model?

10 A   I've not seen anything in any of those places to

11 say that, no.

12 Q   Did Dr. Bailey offer any testimony that this

13 combined model limitation of the claims that we've

14 been talking about is met under the doctrine of

15 equivalents?

16 A   He did not, no.

17 Q   So, in summary, did you conclude that Norton's

18 products do not create a combined model using two

19 different models as required by the claims?

20 A   I did conclude that, yes.

21 Q   And we've talked about two limitations of the

22 claims. Do those limitations appear in every asserted

23 claim that Columbia puts forward in this case?

24 A   They do, yes.

25 Q   So let's go to the third limitation that you said

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1 was not present. And what is that, sir?

2 A   The third limitation that's not present is that

3 Norton products do not satisfy the notifying and

4 application community limitation of Claim 2 of the

5 '115 Patent.

6 Q   You mentioned Claim 2 of the '115. Does that

7 appear only in the '115 Patent?

8 A   That's right.

9 Q   So the next slide we have Claim 2 of the '115

10 Patent, correct?

11 A   That's right.

12 Q   And this is from PX-830. Can you read the

13 limitation that you've highlighted for us on Slide 36?

14 A   Sure.

15 Q   Claim 2 of the '115 Patent.

16 A   So this limitation says, "Upon identifying the

17 anomalous function call, notifying an application

18 community that includes a plurality of computers of

19 the anomalous function call."

20 Q   Has the Court construed an "application

21 community"?

22 A   It has.

23 Q   What did the Court construe that term to be?

24 A   The Court has construed "application community" to

25 mean "members of a community running the same program

1 or a selected portion of the program."

2 Q   Did you apply the Court's construction in your

3 non-infringement analysis?

4 A   I did, yes.

5 Q   So have you prepared a graphic as an example of

6 how to notify an application community when an

7 anomalous function call is identified?

8 A   I have, yes.

9 Q   Can you explain what this is?

10 A   Yes.   So, again, here we have the Minecraft

11 program.   So the Minecraft program is running.   And

12 you recall we had to be executing the Minecraft

13 program in a manner that complies with the first two

14 claim limitations I said are not present in the Norton

15 products, the running it in an emulator and using the

16 combined model as described in the limitations.

17   But when we do that, we would require that also an

18 anomalous function call be identified by such a

19 system.   And that anomalous function call is shown

20 here, and the claim language requires that the

21 application community on the right be notified about

22 that anomalous function call.   That specific anomalous

23 function call.

24 Q   And what is the ordinary meaning of "upon

25 identifying"?

1 A   "Upon identifying," the ordinary meaning would be

2 that there may not be immediate, but there should be a

3 prompt notification that, hey, something's happened,

4 and then the notification goes out.

5 Q   So let's talk about SONAR/BASH. And looking at

6 SONAR/BASH, SONAR/BASH uses its decision tree to

7 identify a function call as anomalous, right?

8 A   That's right.

9 Q   So what happened if SONAR/BASH identifies a

10 function call as anomalous?

11 A   SONAR/BASH will produce a submission, and it will

12 send that submission to the server now at Broadcom as

13 it's shown here.

14 Q   And is that submission ever sent to customers'

15 computers?

16 A   No.

17 Q   So what does Broadcom do with the submission?

18 A   Currently, to my knowledge, it doesn't do anything

19 with that submission. It just stores it.

20 Q   What did Broadcom or Symantec before then do with

21 the submission earlier in time?

22 A   Previously, before 2017, the submissions would be

23 used as training data to generate new trees.

24 Q   And you said that was before 2017 or around 2017?

25 A   Yes.

1   Q   So when was the last time that Norton or Broadcom

2   has trained or put out a new decision tree?

3   A   2017.

4   Q   But in the past, Norton has used this submission

5   to train new decision trees?

6   A   In the past, it would use submissions as training

7   data to produce decision trees.

8   Q   How often did those new decision trees go out to

9   customers?

10 A   So it was stated earlier, and I agree, that the

11 decision trees were produced and sent out to customers

12 on an average of about once every six months.

13 Q   Is sending a decision tree after every six months,

14 is that, in your opinion, meeting the limitation of

15 upon identifying the anomalous function call,

16 notifying the application community?

17 A   No, I don't think that meets the -- what the plain

18 and ordinary meaning of "upon" would be to someone of

19 ordinary skill. I think, you know, you could use

20 it -- and a common phrase is upon arrival, for

21 example. And so we might have this notion that upon

22 arrival at a hotel, you're supposed to check in. Now,

23 you know, when you get to the hotel, you may not check

24 in right away. You might bump into a friend or

25 something like this, but you're not going to wait six

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1   months to check in either. So there's some notion

2   that there's some promptness, some response, some

3   notification rather, that should be generated in a

4   timely fashion.

5   MR. PATHMANABAN: Mr. Schmoller, can we pull

6   up Exhibit DX-DJ, please. And if you can just

7   highlight the top half or blow up the top half, I

8   should say. Thank you.

9   BY MR. PATHMANABAN:

10 Q   Dr. Jaeger, are we looking at the source code

11 representation of the decision tree that you showed us

12 earlier?

13 A   Yes, we are.

14 Q   Are these decision trees notifying anybody about

15 an anomalous function call?

16 A   No, a decision tree doesn't tell you about a

17 specific anomalous function call that's happened.

18 These decision trees will enable you in the future to

19 determine whether a function call is anomalous or not.

20 But you don't know which anomalous function calls

21 happened in the past that led to this decision tree

22 being created.

23 Q   Does BASH decision tree have any information at

24 all indicating whether a specific function call was

25 good or bad or anomalous?

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1   A   No, that's not what it's for.

2   Q   Did you hear Dr. Bailey testify that this

3   notifying limitation of Claim 2 of the '115 patent is

4   met under the doctrine of equivalents?

5   A   Yes, I did hear that.

6   Q   Do you agree with him?

7   A   No, I don't.

8   Q   Are there substantial differences between the

9   notifying requirement of the claims and SONAR/BASH?

10 A   I find that there are, yes.

11 Q   Is the function substantially different?

12 A   Yes. The function is about notifying about an

13 anomalous function call. They are the BASH products

14 don't have that functionality.

15 Q   Is the way substantially different in terms of how

16 they achieve the alleged function?

17 A   The way -- well, the way BASH products -- the

18 Norton products rather -- produce decision trees is

19 quite a bit different than the way I would -- yeah,

20 it's just not the same way one would notify about it.

21 Q   Because there is no notifying?

22 A   Yes.

23 Q   Is the result substantially different?

24 A   Yes.

25 Q   So, in summary, what is your opinion about --

TRENT JAEGER – DIRECT   2094

1   MR. PATHMANABAN: You can pull that down.

2   Thank you, Mr. Schmoller.

3   BY MR. PATHMANABAN:

4   Q   In summary, what did you conclude about the

5   notifying an application community limitation of Claim

6   2 of the '115 Patent?

7   A   That limitation is not met by the Norton products.

8   Q   So, to be clear, did Columbia have to show that

9   each of these limitations are present in Norton's

10   products in order to show infringement?

11   A   They do.

12   Q   And in your opinion, at least three of these are

13   not present?

14   A   That's right.

15   MR. PATHMANABAN: Thank you, Dr. Jaeger.

16   Your Honor, I'll pass the witness.

17   THE COURT: Okay. Thank you.

18   Sir, how long is your cross going to take?

19   MR. BEENEY: It will be an hour and 20

20   minutes. Also I'm not sure if a short break is

21   possible to have five minutes to bring some boxes up.

22   THE COURT: Yeah, I think it's a good time

23   for a break.

24   MR. GUZIOR: Thank you, Your Honor.

25   THE COURT: It's 3:15. Let's try for 3:40.

2095

1   So not quite 30 minutes but almost. Okay?

2   I haven't said it today, but obviously you

3   still can't be talking to each other or making any

4   determination until all the evidence is in.

5   (The jury exited the courtroom.)

6   THE COURT: All right. Sir, I'm going to

7   remind you that you're under oath, which I have to do.

8   And I will do that when the jury comes back, but I

9   believe you all have an understanding with respect to

10   speaking to counsel before cross begins. And so

11   pursuant to your agreement, you may do that. And

12   we'll come back at 3:40.

13   MR. GUZIOR: Your Honor, may I just raise one

14   point?

15   THE COURT: Yes.

16   MR. GUZIOR: We discussed with -- or I

17   discussed with my colleague who just led Dr. Jaeger's

18   direct examination. I'd like to ask the courtroom

19   deputy to hand some copies of source code to the

20   jurors just so they can get a sense of what this

21   material looks like and exactly how dense it is. And

22   my colleague indicated that there was no objection to

23   that.

24   THE COURT: You don't object to that?

25   MR. PATHMANABAN: No, Your Honor.

2096

1   THE COURT: Do you have one copy per juror?

2   MR. GUZIOR: We're only allowed to make one

3 copy of the source code. So they will have to pass --

4 and I know Your Honor said we don't do that in the

5 Eastern District of Virginia, but the source code,

6 we're only allowed to make one copy.

7   I could distribute different parts of the

8 source code to the jurors.

9   THE COURT: Let's try that because passing it

10 around, it distracts the jurors. They start thinking

11 about when it's going to be their turn. And there's a

12 reason we do it, which is just to keep their focus on

13 what needs to be seen.

14   So if you give some of it, you can show the

15 whole thing and then divide it up. There's no

16 objection to that; is that correct?

17   MR. PATHMANABAN: No objection.

18   THE COURT: All right. So we'll operate that

19 way.

20   MR. GUZIOR: Thank you, Your Honor.

21   MR. LUMISH: May I raise one housekeeping

22 question, Your Honor?

23   THE COURT: Yes.

24   MR. LUMISH: Shall I approach?

25   THE COURT: Sure.

2097

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 1              MR. LUMISH:  Our next witness is Dr. Nielson,

 2   and Mr. Guzior, in my experience, is extremely good at

 3   his timing.  So my guess is he's done at something on

 4   the order of 4:40, 5:00.  And so our inclination would

 5   be to call Dr. Nielson today and get him started and

 6   take the half hour, but I wanted to see what Your

 7   Honor's preference was.

 8              THE COURT:  How long is he going to take

 9   total?

10              MR. LUMISH:  This is part of why we'd like to

11   call him.  I think he's about a 90-minute direct, Your

12   Honor, and if we can get the first 30 minutes in, get

13   him qualified, get him accepted, and tomorrow start

14   with more of the substance, that's our inclination if

15   Your Honor will permit it.

16              THE COURT:  Let's see how our timing is.  And

17   I'm going to judge the jury a little bit.  With expert

18   testimony, I think it feels longer than it is.

19              MR. LUMISH:  Indeed.

20              THE COURT:  And I know you're saying sort of

21   what you're suggesting is not the substantive part of

22   the testimony, am I right?

23              MR. LUMISH:  Well, I mean, I don't know how

24   long it goes, but there's at least that much we can do

25   that would get out of the way, get him qualified, and
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                                                              2098

 1   so forth. And we can stop there if Your Honor

 2   prefers.

 3   THE COURT: I think that's probably going to

 4   be enough for them today. And they'll have a sense of

 5   who's coming. And so I would allow that, but

 6   depending on the timing, I'm probably disinclined to

 7   go beyond that today.

 8   MR. LUMISH: Understood. That's why I wanted

 9   to ask.

10   THE COURT: No, that's a very good question.

11   MR. LUMISH: Thank you very much.

12   THE COURT: So we're coming back at -- I just

13   said 3:40, right?

14   THE CLERK: Yes, 3:40.

15   THE COURT: Sir, you'll remain under oath.

16   And we'll see you at 3:40.

17   (Recess taken at 3:20 p.m.)

18   (The trial resumes on the next page.)

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 1                    (The trial resumed at 3:42 p.m.)

 2                    (The jury is not present.)

 3               THE COURT:  We're prepared to go?

 4               MR. GUZIOR:  Yes.  Thank you, Your Honor.

 5               THE COURT:  And I understand that there's a box

 6  that the CSO will be able to hand out portions of; is that

 7  right?

 8               MR. GUZIOR:  Yes, Your Honor.  It's right there.

 9               THE COURT:  Okay.

10               I'll remind you when they come in.  It's just

11  got to be on record.

12               THE WITNESS:  Yes, Your Honor.

13               (The jury entered the courtroom.)

14               THE COURT:  Are we prepared for cross?

15               MR. GUZIOR:  Yes, Your Honor, I'm prepared.

16  Thank you.

17               THE COURT:  All right.  And, Dr. Jaeger, I have

18  to remind you that you're under oath.  I'm sorry that for

19  not having met you, I actually have been mispronouncing

20  your name, but maybe you never knew it.  I still feel I

21  need to apologize.

22               THE WITNESS:  No problem, Your Honor.  People

23  would argue that I'm mispronouncing my name, but --

24               THE COURT:  That's all right.  Same with my last

25  name.
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Trent Jaeger - Cross   2100

1   MR. GUZIOR: May I proceed, Your Honor?

2   THE COURT: Please.

3   **CROSS-EXAMINATION**

4 BY MR. GUZIOR:

5 Q   Good afternoon, Dr. Jaeger. You and I met before at

6 your deposition, right?

7 A   I believe so, yes.

8 Q   Strangely enough, I have a very vivid memory of it

9 because it was right before the pandemic started. It's

10 one of those things where you have a memory of the last

11 normal thing that I can recall before that. So it is very

12 nice to see you again, despite the circumstances.

13 A   Good to see you, although depositions I don't think

14 of as normal things, but anyway.

15 Q   Fair enough, sir.

16   Earlier in the trial, the jury met Dr. Michael

17 Bailey. Were you here for Dr. Bailey's testimony?

18 A   I was, yes.

19 Q   Dr. Bailey has been a professor for a long time, but

20 this was his first time accepting an engagement as an

21 expert witness. Do you remember hearing that?

22 A   I remember hearing it was his first case, yes.

23 Q   Now, this is not your first time getting paid to be

24 an expert witness, right?

25 A   It is not.

Trent Jaeger - Cross   2101

1 Q   In fact, you have served as a paid expert something

2 like 12 to 15 times in patent cases since 2007, right?

3 A   Something like that perhaps.

4 Q   And when you do these sorts of engagements, you keep

5 all the money that you earn from testifying. You don't

6 share any of that with your university, Penn State, right?

7 A   That's right.

8 Q   Now, I want to talk a little bit about your

9 assignment in this case and how you went about completing

10 that assignment. Okay?

11 A   Okay.

12 Q   You were first hired by Symantec to work on this case

13 in 2014, right?

14 A   I was originally hired for different items, a

15 different patent than I'm talking about today, but I think

16 it's related to the same case.

17 Q   So you were engaged by Symantec to serve as an expert

18 in this case around 2014. Fair?

19 A   Yes.

20 Q   Roughly eight years ago?

21 A   Something like that. I don't remember when in 2014.

22 I think it was in the fall.

23 Q   Let's start with source code. Can we agree that it

24 is important to review the source code to understand how

25 Norton's software products work?

Trent Jaeger - Cross   2102

1 A   It's important -- I mean, so my job is to examine the

2 opinions. In this case, I'm looking at Dr. Bailey's

3 theories of infringement and I'm responding to those

4 theories, and so I look at source code in that context.

5 Q   So you did not consider it important to review the

6 source code in order to understand how Symantec's software

7 products work?

8 A   That's not what I said.

9 Q   Well, did you consider it important to review the

10 source code to understand how Symantec's software products

11 work?

12 A   It was important to review the source code, but my

13 job was a little different than Dr. Bailey's.

14 Q   And I'm glad you said that, Dr. Jaeger, because --

15 well, let me ask you this first, sir. Why are you adding

16 that clarification? I want to better understand what

17 you're saying.

18 A   I'm adding that clarification simply to distinguish

19 the task, the scope of the task from Dr. Bailey's task.

20 Q   What do you mean when you say "distinguish the

21 tasks"?

22 A   He has to prove infringement of each and every claim

23 element. He has to figure out what's going on, and I

24 respond to his theories.

25 Q   So you did not view your task as reviewing all of how

Trent Jaeger - Cross   2103

1 Norton's products work to come to your own conclusion on

2 infringement or noninfringement. You considered your task

3 simply to respond to Dr. Bailey's opinions; is that right?

4 A   I wouldn't say "simply" to respond to his opinions.

5 I think responding to his opinions is a nontrivial task,

6 but it's a different task than what Dr. Bailey has.

7 Q   Did you, yourself, perform an independent review of

8 all of the source code for Norton's products in order to

9 come to a conclusion of infringement or noninfringement?

10 A   I did a review of Norton's source code to assess

11 Dr. Bailey's opinions of infringement.

12 Q   But my question is did you do more than that, sir?

13   Did you actually do an independent review of all

14 of Norton's source code in order to reach an opinion on

15 infringement or noninfringement?

16 A   I did an independent review of source code to reach

17 an opinion on infringement or noninfringement related to

18 the -- the theories of Dr. Bailey.

19 Q   But did you go further than the theories of

20 Dr. Bailey? In other words, are you able to tell the jury

21 that based on your independent review of all of Norton's

22 source code, you can conclude that they do not infringe?

23 Can you give that opinion?

24 A   I can give the opinion that the Norton products,

25 based on the review of the source code that I did, that

Trent Jaeger - Cross   2104

 1 they do not infringe for the three reasons that I cited.

 2 Q   Okay. Well, let's explore a little bit more about

 3 the source code review that you did, Dr. Jaeger, now that

 4 you've said that.

 5   I have in front of me, here, sir, these two

 6 boxes to my left and the one box that's in front of the

 7 jury box to the right, printouts of some of the source

 8 code that Dr. Bailey reviewed in this case. And do you

 9 see the three boxes?

10 A   I do, yes.

11 Q   And I'm told by Dr. Bailey that this represents

12 10 percent of the source code reviewed for this case. As

13 someone who works in computer science, is it surprising to

14 you that the source code for a product like Norton's

15 product is perhaps hundreds of thousands of lines of code

16 that would fill 25 to 30 Bankers Boxes?

17 A   Not entirely, no.

18 Q   That's not surprising to you?

19 A   Not totally, no.

20 Q   Right. Because these sorts of products have a lot of

21 source code, right?

22 A   They can.

23 Q   And they do in this case?

24 A   Okay.

25 Q   Do you agree with that?

Trent Jaeger – Cross   2105

1 A   I did not measure the number of boxes of source code.

2 I looked at the source computer. So we didn't measure the

3 boxes.

4   MR. GUZIOR: Your Honor, in accordance with our

5 agreement with Norton's counsel, I'd like to ask the

6 deputy to distribute the source code examples to the

7 jurors.

8   THE COURT: All right. We covered this before

9 so there's no objection.

10 BY MR. GUZIOR:

11 Q   Now, Dr. Jaeger, just to reset the stage, I believe

12 you said as someone who works in computer science, it's

13 not surprising to you that the source code for a product

14 like Norton's software product would consist of so many

15 lines of source code that it could fill 25 to 30 Bankers

16 Boxes, right?

17 A   It could, yeah.

18 Q   Now, I want to show you some of Dr. Bailey's trial

19 testimony and then ask you some questions about it. Is

20 that okay with you?

21 A   Sure.

22   MR. GUZIOR: Mr. Chase, could we please put up

23 trial transcript page 1030 at lines 2 to 12?

24 BY MR. GUZIOR:

25 Q   Dr. Bailey was asked "Did you review the source code

Trent Jaeger - Cross   2106

1   of the SONAR/BASH component?"

2   "ANSWER: I did.

3   "QUESTION: What did that review tell you?

4   "ANSWER: Well, it tells me exactly how the

5   product works. In some very real sense, the

6   source code is the product. It tells the

7   computer what to do. And so in performing any

8   infringement analysis, I relied primary on the

9   source code and then looked to the other sources

10   as a way to confirm my understanding of what was

11   happening."

12   Do you see that?

13 A   Yes, I do.

14 Q   Does any of that seem unusual to you?

15 A   Not -- not really. In the context of what he was

16 doing, no.

17 Q   I see. Let's next look at trial transcript

18 page 1137, line 15 through page 1138, line 12.

19   Dr. Bailey was asked, "Just to put a point on

20 it, is this an example of code that you reviewed in order

21 to understand how the SONAR/BASH component of the accused

22 products works?"

23   "ANSWER: Yeah, one of many examples.

24   "QUESTION: How much source code like this did

25   you review in reaching your opinions?

Trent Jaeger - Cross   2107

1   "ANSWER: Well, we certainly printed out

2   thousands of pages of this. Which if you look

3   at a page, it's maybe 50 lines of code. So

4   certainly at least printed out, tens of

5   thousands of lines of code. That's based on --

6   what to point out is based on my review of the

7   source code in one of these secure environments,

8   and certainly saw tens of thousands of lines of

9   source code in my review.

10   "QUESTION: And about over sort of what period

11   of time did you review the source code to

12   understand how SONAR/BASH operates?

13   "ANSWER: Both in person and then reviewing the

14   printouts of the source code that we have,

15   hundreds of hours of time.

16   "QUESTION: Do you think as a result of the

17   hundreds of hours of reviewing this type of

18   source code that you have a good understanding

19   of how the SONAR/BASH component works?

20   "ANSWER: I think so. Yes."

21   Do you see that?

22   A   I do, yes.

23   Q   Does any of that seem unusual to you?

24   A   Not for the task that he's performing necessarily,

25   no.

Trent Jaeger - Cross   2108

1 Q   Now, I'd next -- Dr. Jaeger, I'd like to look at

2 trial transcript page 1068 at lines 9 to 13.

3   The question to Dr. Bailey was, "You've spent a

4 lot of time with SONAR/BASH, haven't you?

5   "ANSWER: A considerable amount of time, yes.

6   "QUESTION: Several years, in fact, right?

7   "ANSWER: Indeed."

8   Do you see that?

9 A   Yes.

10 Q   And just like yourself, Dr. Jaeger, Dr. Bailey has

11 been working on this case since it resumed in 2018,

12 several years ago, right?

13 A   I believe he was working on it before that as well.

14 Q   As you were, sir?

15 A   Well, I wasn't working on these patents. As I said,

16 I did an invalidity report, so I was looking even at --

17 primarily other patents, I believe.

18 Q   And that's the point I'm getting to, sir. You have

19 been working on these patents at this trial since at least

20 2018 when this case restarted, correct?

21 A   Since 2018, I worked on the case. Of course, we had

22 the pandemic. So there hasn't been much work on the case

23 lately, but --

24 Q   Sorry, sir.

25 A   There hasn't been much work since the pandemic.

Trent Jaeger - Cross   2109

1 Q   But you have been engaged to work on the patents in

2 this trial since 2018? Yes or no.

3 A   The engagement for these patents started in 2018.

4 Q   Thank you, sir.

5   And, Dr. Jaeger, I'd also like to look at trial

6 transcript page 1031, lines 4 to 23. And I'd like to look

7 at line 12.

8   "QUESTION: Given the volume, did you have any

9   help in reviewing the source code?

10   "ANSWER: I did. I had two folks that helped me

11   with source code review at my direction."

12   Do you see that?

13 A   I do, yes.

14 Q   And you also saw that Dr. Bailey testified that he

15 spent hundreds of hours reviewing the source code over

16 many years, right?

17 A   I did, yes.

18 Q   But, Dr. Jaeger --

19   MR. GUZIOR: Mr. Chase, we can put this down.

20 BY MR. GUZIOR:

21 Q   -- you, in reaching your opinions in this case, spent

22 only part of maybe four or five days looking at the code,

23 right?

24 A   As I mentioned, Dr. Bailey did the work in coming up

25 with the infringement theory. So it's a different task.

Trent Jaeger - Cross   2110

1 Q   You're not answering my question, sir. I apologize.

2 I'd like to have a straight answer.

3   To come up with your opinion, you spent only

4 part of four, maybe five days looking at the code, right?

5 A   So my -- my task was Dr. Bailey would provide his

6 opinions. I could look at the copious Symantec

7 documentation and Dr. Bailey's citation of source code,

8 and based on the design documents, I could identify

9 particular problems, and based on Dr. Bailey's citations,

10 I could drill down quickly and focus on the relevant

11 source code for these three arguments that -- or these

12 three limitations, rather, that I found were not

13 satisfied. So this is a different task than searching

14 through the source code to build infringement theories.

15 Q   We'll get to your three points later, sir. I'm just

16 trying to better understand your methodology.

17 A   Uh-huh.

18 Q   And I'm going to ask a third time if you would answer

19 my question, and then we may have to go to your deposition

20 video.

21   Dr. Jaeger, to come up with your opinions in

22 this case, you spent only part of four, maybe five days

23 looking at the source code, right?

24 A   I spent part of four or five days looking at the

25 source code to confirm those issues that I found from

Trent Jaeger - Cross   2111

1 Dr. Bailey's theories.

2 Q   And we saw a moment ago that Dr. Bailey had two

3 assistants who helped him look at all of this source code,

4 right?

5 A   That's what it said, yes.

6 Q   But you did not have any technical assistants help

7 you with your review of the code, right?

8 A   I did not need any technical assistants for that, no.

9 Q   Although you didn't have technical assistants, some

10 of Norton's lawyers did sit in the room with you while you

11 reviewed the code, right?

12 A   There were -- the code that I looked at was on a

13 source code computer, and so sometimes there were Norton

14 lawyers around as well, yes.

15 Q   The lawyers who joined your source code review were

16 from a law firm called Quinn Emanuel, right?

17 A   That's correct.

18 Q   And you told me before that there was one Quinn

19 Emanuel lawyer in particular, Mr. Hamstra, who sat in the

20 room with you during source code review, right?

21 A   In one occasion. The reason he was in the room

22 partly was that we were -- he came to State College with

23 the source code computer, and he was staying in a hotel

24 room. So I was in the same room as him.

25 Q   But Mr. Hamstra gave you some orientation about what

Trent Jaeger - Cross   2112

1 source code to review, and then you looked at the code,

2 right?

3 A   Well, you might be implying something more in the

4 word "orientation," but he showed me, for example, the

5 layout of the files of the source code so that I knew --

6 if you're familiar with these complicated file systems and

7 we can see there's lots of code, you know, there's a

8 complicated directory tree structure for the file system,

9 and he told me where certain things were, what directories

10 they were in.

11 Q   And you didn't ask a technical assistant to help you

12 with that. Rather, Norton's lawyer, Mr. Hamstra, from

13 Quinn Emanuel gave you that orientation, right?

14 A   These were not complicated questions since he had

15 looked at the source code a little bit. So I didn't need

16 technical assistants in addition to that to answer that

17 question.

18 Q   Now, although a lawyer from Quinn Emanuel helped you

19 with that orientation, you did not ask anyone from

20 Symantec to join you in your review, right?

21 A   I did not, no. It wasn't a complicated question to

22 answer.

23 Q   In fact, despite the fact that you were engaged to

24 work on this project for Symantec, you did not even

25 discuss any of the code with anyone at Symantec, right?

Trent Jaeger - Cross   2113

1 A   I didn't find that was necessary in my review.

2 Q   So the answer to my question is no?

3 A   No, I did not find it necessary.

4 Q   Not even one question about the code for any of the

5 engineers at the company that engaged you, right?

6 A   I didn't find that necessary, no.

7 Q   In fact, to reach all of your opinions in the reports

8 that you submitted, you spoke with only one Symantec

9 employee, David Kane, right?

10 A   David Kane was the one Symantec employee I spoke to.

11 I, of course, looked at the source code and tons of

12 Symantec documentation written by many of the people that

13 you've heard about over the course of the trial.

14 Q   I'm sorry. Dr. Jaeger, I might have misheard you.

15 The only person from Symantec that you spoke with in

16 reaching your opinions in this case was David Kane, right?

17 A   He was the only person I spoke to synchronously. As

18 I mentioned, I read lots of things from lots of other

19 Symantec employees. There's a ton of technical

20 documentation also, probably similar to the size of the

21 source code for these products.

22 Q   But you did not speak with any of the authors of

23 those documents, right?

24 A   I did not find that I needed to speak with them. The

25 documents were fairly well written.

Trent Jaeger - Cross   2114

1 Q   And when you spoke with Mr. Kane, you did not talk to

2 Mr. Kane about decision trees, right?

3 A   We did not talk about decision trees, no.

4 Q   And you did not talk about BASH submissions, right?

5 A   No, we did not discuss that topic.

6 Q   The only thing you discussed with Mr. Kane was

7 something called LiveUpdate that is no longer part of the

8 case, right?

9 A   I believe that's correct, yes.

10 Q   So when it comes to the relevant parts of the case

11 that the jury is being asked to decide, you did not speak

12 with anyone at Symantec to help you in forming your

13 opinions, right?

14 A   I didn't find that was necessary.

15 Q   Okay. Thank you for your candor.

16   So we talked about your review of the source

17 code and the discussions with employees, but now I want to

18 talk about your assignment on a more conceptual level.

19   Do you understand, Dr. Jaeger, that Norton has

20 no argument that the Columbia patent claims are invalid?

21 A   There were no invalidity reports provided in this

22 case, no.

23 Q   So you took Columbia's patent claims as valid for

24 purposes of your infringement analysis, right?

25 A   I'm not sure what my limits are in answering this

Trent Jaeger - Cross   2115

 1 question.

 2   MR. PATHMANABAN: Objection, Your Honor. We

 3 object as this is violating MIL order and irrelevant.

 4 He's not offering an opinion on validity, and he should

 5 not be cross-examined about validity.

 6   MR. GUZIOR: Your Honor, I'm just trying to

 7 explore whether he treated the claims as valid in

 8 determining whether they were infringed.

 9   MR. PATHMANABAN: Your Honor, may I ask to

10 approach?

11   THE COURT: You want to approach?

12   MR. PATHMANABAN: Yes.

13   THE COURT: Sure. Come on up.

14   (The following was out of the hearing of the

15   jury:)

16   THE COURT: You're going to have to get close to

17 this because that's how you are heard. Okay?

18   MR. PATHMANABAN: Your Honor, Mr. Guzior's

19 questions are putting Dr. Jaeger in an impossible

20 position. His true opinions are these patents are not

21 valid, but per Your Honor's orders, he's not allowed to

22 express an opinion about that. That's fine. We're

23 abiding by that.

24   But he can't ask him, well, you're not

25 expressing an opinion about validity. He's precluded from

Trent Jaeger - Cross   2116

1 opining about validity. So he's not opining about

2 validity. He should not be asking him.

3   MR. GUZIOR: Your Honor, all I'm trying to

4 explore is my colleague asked Dr. Jaeger about his

5 understanding of the invention, and Dr. Jaeger provided a

6 high level explanation, which is where I'm going. And I

7 want to establish that Dr. Jaeger is not -- in

8 understanding what the invention was and determining

9 whether there's infringement, he was required to assume

10 that these claims are valid, and he's not questioning

11 that.

12   MR. PATHMANABAN: Your Honor, his understanding

13 of the claims, he can question him about, but that has

14 nothing to do with whether these --

15   THE COURT: Well, it's a requirement under the

16 law.

17   MR. GUZIOR: It is.

18   THE COURT: The law says he has to presume it's

19 valid in his analysis. I mean, I --

20   MR. PATHMANABAN: Your Honor, if allowed, he

21 would have expressed an opinion that it's invalid despite

22 the presumption. You can't ask him about something that

23 he doesn't truly believe and he's not been allowed to

24 express an opinion.

25   THE COURT: Well, the question, though, is did

Trent Jaeger - Cross   2117

 1 he follow the law in saying -- when he did his analysis.

 2 So he can say he thinks they're invalid. I mean, he can't

 3 say that now, but -- can you hear me?

 4   MR. PATHMANABAN: Yes.

 5   THE COURT: Sorry. I'm talking to the court

 6 reporter.

 7   But to do his analysis correctly, he has to have

 8 assumed that the patents were valid. That's a requirement

 9 under the law. So it's not his opinion about whether or

10 not they're valid. It's how he has to reach his opinion.

11 It's a presumption of validity. He's not -- he's not

12 adopting it.

13   MR. GUZIOR: Yes.

14   MR. PATHMANABAN: The question he was asked was

15 so you don't offer an opinion about invalidity. He

16 asked -- Mr. Guzior asked that question.

17   THE COURT: Well, that's improper.

18   MR. GUZIOR: I don't think that's exactly how I

19 phrased the question, but I --

20   THE COURT: So let's just put a good question on

21 the table. How about the question of when you performed

22 your analysis -- and I think it's fair to say whether or

23 not you agree -- did you presume that the patents were

24 valid?

25   MR. PATHMANABAN: Okay. We understand.

Trent Jaeger - Cross   2118

1   THE COURT: Okay.

2   MR. GUZIOR: Thank you, Your Honor.

3   (The following was in open court:)

4 BY MR. GUZIOR:

5 Q   Dr. Jaeger, picking up where we left off, when you

6 performed your infringement analysis, whether you agree

7 with it or not, did you understand that you had to assume

8 Columbia's patent claims were valid?

9 A   Yes.

10 Q   And you did that?

11 A   Yes.

12 Q   Now, would you agree with me, Dr. Jaeger, that to

13 reach a thoughtful infringement opinion you need to

14 understand the scope of the invention in the asserted

15 claims?

16 A   You know, it depends on what you mean by "scope," but

17 you have to understand the relevant scope, yes.

18 Q   What do you mean by "relevant scope," sir?

19 A   Scope that is relevant to the claim limitations.

20 Q   And so can we agree --

21   THE COURT: I'm sorry. I didn't hear that. The

22 scope that is.

23   THE WITNESS: Oh, sorry. Relevant to the claim

24 limitations.

25   THE COURT: Okay.

Trent Jaeger - Cross   2119

 1 BY MR. GUZIOR:

 2 Q   And so can we agree, sir, that in order to perform a

 3 thoughtful infringement analysis, you at least need to

 4 understand what the invention is that's covered by the

 5 patent claims? Can we agree on that?

 6 A   It sounds reasonable, yes.

 7 Q   But when you reached your infringement opinions in

 8 this case, you did not bother to understand what the

 9 invention in the asserted claims were because you did not

10 think it was your job, right?

11 A   I don't agree with that statement, no.

12 Q   Let's take a look at your deposition, please, which

13 is in front of you, sir. Page 250, lines 12 to 20. It's

14 one of the spiral-bound volumes.

15 A   Okay.

16   THE COURT: Do I have that?

17   MR. GUZIOR: Yes, Your Honor.

18 A   What page? Sorry.

19 BY MR. GUZIOR:

20 Q   Page 250, lines 12 through 20, please.

21   MR. PATHMANABAN: Your Honor, I object as

22 improper impeachment.

23   THE COURT: Did you want to argue that?

24   MR. PATHMANABAN: Your Honor, the question has

25 nothing to do -- page 250, lines 12 through 20 has nothing

Trent Jaeger - Cross   2120

 1 to do with the question that Mr. Guzior just posed to

 2 Dr. Jaeger.

 3   MR. GUZIOR: It's directly relevant, Your Honor.

 4   THE COURT: Unfortunately, I'm not with you yet.

 5   MR. GUZIOR: It's page 250.

 6   THE COURT: Yeah, I don't -- I don't have the

 7 right -- now I'm there. Sorry.

 8   I don't think it's exactly the same thing.

 9   MR. GUZIOR: Not --

10   THE COURT: No. So you can't impeach on it.

11   MR. GUZIOR: Okay. Thank you, Your Honor.

12   MR. PATHMANABAN: Thank you, Your Honor.

13   THE COURT: Sustained.

14 BY MR. GUZIOR:

15 Q   Dr. Jaeger, do you recall at your deposition when I

16 asked you to tell me what you consider to be the invention

17 described in the asserted claims, you ultimately refused

18 to answer the question on the basis that you said we were

19 out of time? Do you recall that, sir?

20 A   I don't remember what the question was, but I

21 remember you were out of time at some point. There may

22 have been -- I don't remember what question was pending

23 when you ran out of time.

24 Q   But do you recall that you never did answer my

25 question about what you consider to be the invention

Trent Jaeger - Cross   2121

 1 described in the asserted claims? You never gave me an

 2 answer to that question, right?

 3 A   I don't remember the question that was pending.

 4 Q   Let me see if I can refresh your recollection, not

 5 for impeachment, but would you please take a look at your

 6 deposition transcript, sir, page 250, line 12 through

 7 page 251, line 25.

 8 A   I'm there.

 9 Q   Has your recollection been refreshed that at your

10 deposition you never answered my question of what you

11 consider to be the invention in the asserted claims

12 because you asserted we were out of time?

13   MR. PATHMANABAN: I'm sorry to interrupt again,

14 Your Honor, I object as misleading. The lawyer made an

15 instruction not to answer.

16   MR. GUZIOR: And that's the question I asked.

17   THE COURT: Well, you asked if you were out of

18 time. That's not the same.

19   MR. GUZIOR: Let me withdraw the question,

20 Your Honor.

21   THE COURT: All right. Sustained.

22 BY MR. GUZIOR:

23 Q   Dr. Jaeger, do you remember at your deposition you

24 were defended by Mr. Hamstra, the gentleman we talked

25 about earlier, when we talked about your source code

Trent Jaeger – Cross   2122

1   review?

2   A   Yes.

3   Q   And do you remember that when I asked you what you

4   considered to be the invention in the asserted claims,

5   your lawyer instructed you not to answer that question

6   because he claimed we were out of time? Do you remember

7   that?

8   A   I think that's right, yeah.

9   Q   Okay. I next want to talk about your infringement

10 opinions with more specificity. You understand that BASH

11 is the product feature at issue in the patent infringement

12 side of this case, right?

13 A   Yes.

14 Q   You agree with me that BASH can detect attacks that

15 haven't previously been seen, right?

16 A   That's my understanding, yes.

17 Q   You also agree with me that running programs analyzed

18 by SONAR/BASH can make library calls, which is a type of

19 function call, right?

20 A   I'm not disputing that now. That's true.

21 Q   You did dispute that quite a lot in your deposition,

22 right?

23 A   Perhaps.

24 Q   But you're no longer disputing that today?

25 A   No.

Trent Jaeger - Cross   2123

1 Q   You agree with me that SONAR/BASH has rules to

2 monitor events that happen at program run time, right?

3 A   That's right.

4 Q   And by run time, we have a common understanding that

5 means when the program is actively executing, right?

6 A   That's commonly the way run time is determined, yes.

7 Program is executing.

8 Q   And thus, SONAR/BASH monitors an actively executing

9 program, right?

10 A   It has the capability to do that, yes.

11 Q   We also can agree that in SONAR/BASH, there will be a

12 comparison between a particular attribute of the program

13 as it is running during run time and the decision trees,

14 right?

15 A   There is this type of functionality. But as I

16 mentioned, there are three -- three reasons why that BASH

17 functionality doesn't fulfill the claim limitations.

18 Q   I understand what your position is on infringement.

19 I'm just trying to get an understanding of our common

20 ground. Now, depending on the result of the comparison to

21 the decision tree, SONAR/BASH can terminate that running

22 program or process, right?

23 A   SONAR/BASH can terminate a running process if it is

24 implicated as being bad, yes.

25 Q   I see. Now, despite our agreement on all of that,

Trent Jaeger - Cross   2124

 1 it's your testimony that when SONAR/BASH is installed on a

 2 computer, a monitored program does not execute in an

 3 emulator as that term was construed by the Court; is that

 4 right?

 5 A   The term emulator was construed by the Court or in an

 6 emulator was construed by the Court?

 7 Q   The term emulator was construed by the Court. You

 8 know that, right, sir?

 9 A   I do, yes.

10 Q   And despite our agreement on several of the facts,

11 it's your testimony that when SONAR/BASH is installed on a

12 computer, a monitored program does not execute in an

13 emulator. Is that your opinion?

14 A   My opinion is that SONAR/BASH -- yes, that the

15 program is not run in SONAR/BASH when it's being monitored

16 by SONAR/BASH. The calls are diverted, as I spoke of,

17 from the program to SONAR/BASH.

18 Q   Now, I want to unpack what we just discussed, and in

19 doing so, I want to talk about the chronology of the

20 expert reports that were submitted in this case. Okay?

21 A   Okay.

22 Q   Dr. Bailey submitted an opening infringement report,

23 right?

24 A   Yes.

25 Q   And then you submitted a response report, right?

Trent Jaeger - Cross   2125

 1 A   Yes.

 2   MR. GUZIOR: Mr. Chase, can we please put up

 3 Dr. Jaeger's response report?

 4 BY MR. GUZIOR:

 5 Q   And let's take a look at the signature page, which I

 6 believe does not have a page number, but it's after

 7 page 266. Is that your signature, sir?

 8 A   It is, yes.

 9 Q   And you signed this report on October 10th, 2019,

10 right?

11 A   That's what it says, yeah.

12 Q   I want to look at paragraph 5 of this report on

13 page 1. Can you read that paragraph, sir?

14 A   Sure. "I reserve the right to modify or supplement

15 my opinions, as well as the basis for my opinions, in

16 light of any new positions set forth by plaintiff, The

17 Trustees of Columbia University in the City of New York

18 (Columbia), concerning the scope and interpretation of the

19 asserted claims, or the application of the claim language

20 thereof."

21   THE COURT: So I'm going to just -- that was

22 really fast.

23   THE WITNESS: Oh, sorry.

24   THE COURT: It always happens when folks are

25 reading. It's also as you're looking at the camera. Can

Trent Jaeger - Cross   2126

 1 you pull the mic a little ahead of you or is it hard

 2 because the notebooks are there? Okay.

 3 BY MR. GUZIOR:

 4 Q   Now, moving along in the timeline, chugging along,

 5 after you submitted this report, Dr. Bailey submitted a

 6 rebuttal report, right?

 7 A   Yes.

 8   MR. GUZIOR: Mr. Chase, let's please pull up

 9 Dr. Bailey's rebuttal report.

10 BY MR. GUZIOR:

11 Q   And on the cover, do you see that the date is

12 November 18th, 2019?

13 A   I do, yes.

14 Q   A little more than a month after your report, right?

15 A   That's right, yes.

16 Q   Let's please take a look at paragraph 60 of

17 Dr. Bailey's rebuttal report. Do you see the sentence

18 that starts, "Thus, the computing environment"?

19 A   I do, yes.

20 Q   And that sentence says, "Thus, the computing

21 environment in which the monitored program is being run,

22 which includes SONAR/BASH and its use of user code

23 hooking, kernel mode hooking, windows registry call-back

24 functionality or file system filtering is the emulator for

25 purposes of the asserted claims." Do you see that?

Trent Jaeger - Cross   2127

1 A   I do, yes.

2 Q   I'd next like to look at paragraph 61 that follows

3 this paragraph. And do you see the sentence that starts,

4 "Thus, when a program"?

5 A   Yes.

6 Q   And that says, "Thus, when a program is executing in

7 an environment in which SONAR/BASH is using these tools,

8 it is running in an emulator." Do you see that?

9 A   I do, yes.

10 Q   Now, you were in attendance when Dr. Bailey was

11 cross-examined by Norton's lawyer, right?

12 A   I was, yes.

13 Q   And do you remember when Norton's lawyer suggested to

14 Dr. Bailey that what we just read together constituted new

15 opinions that Dr. Bailey raised only in his rebuttal

16 report? Do you remember that?

17 A   I think so.

18 Q   Now, keeping in mind that paragraph 5 that we looked

19 at from your report a moment ago -- do you have that in

20 mind?

21 A   Yes.

22 Q   After Dr. Bailey submitted his rebuttal report, you

23 submitted a supplemental report, right?

24 A   There was a report called that, I believe, yes.

25   MR. GUZIOR: Let's pull up Dr. Jaeger's

Trent Jaeger - Cross   2128

 1 | supplement, please.

 2 | BY MR. GUZIOR:

 3 | Q   And let's look at the last page, the signature page.

 4 | A   So I noticed on the cover of that it said it was a

 5 | response to Dr. Bailey's supplement. Is that a response

 6 | to Dr. Bailey's rebuttal report or is that a response to a

 7 | different report?

 8 | Q   We'll get there in a moment, Dr. Jaeger.

 9 | So Dr. Bailey submitted a supplement report, and

10 | this is your response to that supplement report, right?

11 | A   That's why, my understanding -- that's -- and

12 | Dr. Bailey's supplement report is different than the

13 | rebuttal report we were just looking at where you were

14 | reciting the quotes.

15 | Q   That's correct, Dr. Jaeger.

16 | A   Okay.

17 | Q   It's my fault. I caused confusion. We looked at

18 | Dr. Bailey's rebuttal report from November of 2019.

19 | A   Uh-huh. That's correct.

20 | Q   Dr. Bailey had a supplement, right?

21 | A   Yes.

22 | Q   And then you submitted this supplement, right?

23 | A   I submitted a supplement in response to his

24 | supplement I believe it said.

25 | Q   And this is dated January 13th, 2020, right?

Trent Jaeger - Cross   2129

1 A   That's correct.

2 Q   Now, this is a short supplement, right, maybe four or

3 five pages?

4 A   Yes, I think that's correct. I think Dr. Bailey's

5 supplement wasn't very long either.

6 Q   And, Dr. Jaeger, you did not anywhere respond to

7 Dr. Bailey's --

8   MR. GUZIOR: I think there's an objection,

9 Your Honor.

10   THE COURT: Yes, sir.

11   MR. PATHMANABAN: Your Honor, again, I have to

12 apologize for interrupting, but I object as misleading

13 because the supplemental report, as we understand, was a

14 response to Dr. Bailey's supplemental report based on the

15 Court's claim construction of an entirely different term,

16 model of function calls, and had nothing to do with

17 executing a program in an emulator.

18   And surreplies were not permitted. So the

19 suggestion Mr. Guzior is making was that he was somehow

20 within his rights to submit a surreply to Dr. Bailey's new

21 opinion about what constituted the emulator and he failed

22 to do so. That is a completely misleading and improper

23 suggestion.

24   MR. GUZIOR: No. Your Honor, this is proper

25 cross-examination. We looked at paragraph 5 of

Trent Jaeger - Cross   2130

1 Dr. Jaeger's response report where he said if I believe

2 there are new opinions raised, I reserve the right to

3 respond to them, as every expert does. And the point I'm

4 making is Dr. Jaeger never responded.

5   THE COURT: Did I -- was there a prohibition on

6 surreplies in expert reports?

7   MR. GUZIOR: No, Your Honor. An expert, if they

8 believe a new opinion is raised, always can seek to file a

9 supplement or a surreply.

10   And, in fact, that's what we just looked at

11 happened in this case when Dr. Bailey requested to submit

12 a supplement.

13   MR. PATHMANABAN: Your Honor, the supplement was

14 based on Your Honor's subsequent claim construction of a

15 completely different term and it was --

16   THE COURT: Well, tell me where I disallowed a

17 surreply to the report? I do it with briefs all the time.

18   MR. PATHMANABAN: Your Honor, my understanding

19 is that surreplies were not allowed for Dr. Jaeger to

20 respond. It was -- the scheduling report permitted an

21 opening report, a rebuttal report of noninfringement and

22 then a reply by Dr. Bailey. There was no surreply.

23   MR. GUZIOR: Then what was the point of the

24 reservation of rights in Dr. Jaeger's response report?

25   MR. PATHMANABAN: Your Honor, he --

Trent Jaeger - Cross   2131

 1 Mr. Guzior --

 2   THE COURT: All right. I think -- I think you

 3 both now have made speaking objections, which I let you

 4 do, and I'm going to -- you don't have to answer that

 5 question and we're going to move on. You've essentially

 6 stated your positions on the record.

 7   MR. PATHMANABAN: Thank you.

 8   THE COURT: And you all take whatever you want.

 9 What the lawyers say is not evidence. Without my order in

10 front of me, I can't say that I disallowed any kind of

11 update in an expert report. And if you put it in front of

12 me, I'll be able to say it, but I think -- I think we're

13 done with this issue.

14   MR. GUZIOR: Thank you, Your Honor.

15   MR. PATHMANABAN: Thank you, Your Honor.

16   MR. GUZIOR: Your Honor, I would like -- I will

17 move away from the point about rebuttals and surreplies,

18 but I would like to ask one question about whether

19 Dr. Jaeger ever did provide an opinion on an issue.

20   THE COURT: Well, I guess he can answer whether

21 he thought he had an opportunity to do it if you ask.

22 BY MR. GUZIOR:

23 Q   Now, Dr. Jaeger, we looked at paragraph 5 of your

24 response report in which you said that you reserve the

25 right to respond to additional opinions, right?

Trent Jaeger - Cross   2132

1 A   That's correct.

2 Q   Did you, in this case, ever provide a response to

3 Dr. Bailey's opinion that the operating system with

4 SONAR/BASH installed was the emulator?

5 A   I -- I have an opinion if you would -- on that topic

6 if you would like to hear it.

7 Q   But did you ever provide it?

8 A   I was -- in the context of these -- of this process,

9 I was not asked to provide that opinion, but I have an

10 opinion on that.

11 Q   Now, Dr. Jaeger, I want to talk a little bit about

12 notification and your opinion regarding the notification

13 limitation of Claim 2 of the '115 patent.

14 A   Okay.

15 Q   That limitation requires, upon identifying the

16 anomalous function call, notifying an Application

17 Community that includes a plurality of computers of the

18 anomalous function call; is that right?

19 A   That's correct.

20 Q   First, that limitation does not appear anywhere in

21 the asserted claims of the '322 patent, right?

22 A   That claim element is only in the '115, that's right.

23 Q   So your opinion on this issue has nothing to do with

24 infringement of those claims of the '322 patent, right?

25 A   That's correct.

Trent Jaeger - Cross   2133

1 Q   So even if your opinion on notification was correct,

2 logically Norton could still infringe Claims 2, 11, and 27

3 of the '322 patent, right?

4 A   If the jury finds that's the case, yes.

5 Q   But logically, that could happen?

6 A   Depends on what you mean by "logically," but it's

7 potential. But I guess in my logic, I would think it

8 shouldn't happen.

9 Q   But the notification limitation doesn't appear in the

10 claims of the '322 patent?

11 A   That's correct.

12 Q   So whether that limitation is met has nothing to do

13 with infringement of the '322 claims, right?

14 A   Whether it's met or not has nothing to do with the

15 assessment of infringement or noninfringement of the '322

16 claims, that's correct.

17 Q   Now, Dr. Jaeger, I'd like to show you some of

18 Mr. Pereira's deposition testimony that was played in

19 court already, and then I would like to ask you some

20 questions about it. Is that okay with you?

21 A   Sure.

22 Q   And this first clip will be from Pereira, 224,

23 lines 22 to 225, line 9; page 225, line 19 to 23;

24 page 225, line 24 to 226:4; page 228, lines 3 to 6;

25 page 230, lines 3 to 5; and page 239, lines 9 to 20.

Trent Jaeger - Cross   2134

 1   And, Mr. Chase, would you play the video?

 2 A   Do I have the --

 3   THE COURT: There's an objection.

 4   MR. PATHMANABAN: I'm sorry, Your Honor. Do you

 5 have a copy of the deposition transcript?

 6   MR. GUZIOR: Yes, of course. I think we offered

 7 it to your colleagues at the break.

 8 A   Which one is it?

 9   MR. GUZIOR: I have extra copies if it's easier.

10   Your Honor, do you have a copy?

11   THE COURT: No.

12   MR. GUZIOR: I'll get one.

13   And my colleagues have asked me to repeat the

14 page and line numbers, which I'm happy to do.

15   THE COURT: Do it a little more slowly because

16 we can't keep up with you, please.

17   MR. GUZIOR: Page 224, line 22 to page 225,

18 line 9; page 225, lines 19 to 23; page 225, line 24 to

19 page 226, line 4; page 228, lines 3 to 6; page 230,

20 lines 3 to 5; page 239, lines 9 to 20.

21   And this is all testimony that was already

22 played into the record, Your Honor.

23   THE COURT: I'm sorry. What was the last one?

24 230 --

25   MR. GUZIOR: 239, lines 9 to 20.

Trent Jaeger - Cross   2135

 1   THE COURT: And I'm sorry. Can you remind me,

 2 were there some on 223 or just 224?

 3   MR. GUZIOR: It starts on page 224 at line 22.

 4   THE COURT: And then does it go all the way to

 5 225?

 6   MR. GUZIOR: It goes from 224, line 22 to 225,

 7 line 9.

 8   THE COURT: Okay.

 9   MR. GUZIOR: Picks up at 225, lines 19 to 23;

10 225, line 24 to 226, line 4; 228, lines 3 to 6; 230,

11 lines 3 to 5; and 239, lines 9 to 20.

12   THE COURT: All right. Thank you. Do you all

13 have that? I was kind of kidding. Sorry.

14   MR. GUZIOR: I can repeat it a ninth time.

15   THE COURT: I'm sorry.

16   We need to keep track of these things. This is

17 how it works, and so I'm not trying to waste your time,

18 nor is he. So I know it can seem not a good use of your

19 time, but it really is important for our written record.

20   All right. Thank you.

21   MR. GUZIOR: May we play the video?

22   THE COURT: There's no objection, is there?

23   MR. PATHMANABAN: No objection.

24   THE COURT: Okay.

25   (Video Played.)

Trent Jaeger - Cross   2136

 1 BY MR. GUZIOR:

 2 Q   Now, Dr. Jaeger, first, to be clear, you have never

 3 had a conversation with Mr. Pereira about his deposition

 4 testimony in this case or about anything else related to

 5 this case, right?

 6 A   No, I have not.

 7   Could I have the last part of that replayed

 8 though, please?

 9 Q   How much would you like replayed, Dr. Jaeger?

10 A   Yeah. I --

11   THE COURT: I think it's fair to replay the

12 whole thing.

13 A   Yeah, it's probably easier.

14   MR. GUZIOR: Mr. Chase, could we replay the

15 video?

16   (Video Played.)

17 BY MR. GUZIOR:

18 Q   I might be able to do that one from memory,

19 Dr. Jaeger, but thank you for paying attention.

20   Now, do you have my question in mind or should I

21 repeat it?

22 A   I'd ask you to repeat it.

23   THE COURT: Why don't you repeat it.

24 BY MR. GUZIOR:

25 Q   Have you ever had a conversation with Mr. Pereira

Trent Jaeger - Cross   2137

 1 about his deposition testimony or otherwise on any topic

 2 for this case?

 3 A   No, I have not.

 4 Q   And do you have any reason to dispute the content of

 5 Mr. Pereira's testimony?

 6 A   I think there are points where he had to clarify some

 7 of his own testimony, he felt the need to do that, but I'm

 8 not sure what you're getting at. Maybe we'll have to look

 9 at a specific comment.

10 Q   Was there any fact that Mr. Pereira provided in his

11 testimony that you dispute?

12   Are you okay, Dr. Jaeger?

13 A   Yes. Yes. I'm just -- no, I don't think there's a

14 fact in his testimony that I would dispute.

15 Q   And you understand that the Court has construed the

16 claim term Application Community, right?

17 A   Yes.

18 Q   And we can agree that under the Court's construction

19 of Application Community, the computer users running

20 Norton's SONAR/BASH constitute an Application Community,

21 right?

22 A   I'm not disputing that, no.

23 Q   And you do not dispute that that Application

24 Community consists of a plurality of computers, meaning

25 two or more computers, right?

Trent Jaeger - Cross   2138

1 A   Right.

2 Q   You also do not dispute that at least until late

3 2017, Norton collected information from the Application

4 Community, used some of that information to create a new

5 decision tree, and sent the new decision tree out to

6 customers every three to six months, right?

7 A   I think I heard that average was six months was what

8 was said, but --

9 Q   Otherwise agree?

10 A   Otherwise agree.

11 Q   And we can agree that the notifying limitation of

12 Claim 2 of the '115 patent can be met even if the

13 notification from a community member to another community

14 member goes through an intermediary, right?

15 A   Yes. I've said I don't think an intermediary is a

16 limitation.

17 Q   In other words, the claims do not require, applying

18 the plain and ordinary meaning, that the notification be

19 direct from one computer user in the Application Community

20 to the other users in the Application Community, right?

21 A   Yes, I've said that.

22 Q   Right. Last topic, Dr. Jaeger. Models. First,

23 earlier today did you provide the opinion that the BASH

24 decision tree constitutes a model of function calls for

25 the at least a part of the program as that term has been

Trent Jaeger - Cross   2139

1 construed by the Court?

2 A   Yes.

3 Q   Now, that has not always been your opinion because in

4 fact, in your report you took the opposite position,

5 right?

6   Are you okay, sir?

7 A   It depends on the context of what you're referring

8 to. I -- there's, of course, much more to the claim

9 language than just the "a model of function calls" that

10 needs to be met.

11 Q   Can we take a look at your report together? And I'd

12 like to look at page 115 of your report. And I'd like to

13 look at the header F. Do you see that, Dr. Jaeger?

14 A   I do, yes.

15 Q   This says, "The accused products do not use a model

16 of function calls for the at least a part/portion of the

17 program, or compare a function call to such a model." Do

18 you see that?

19 A   I do, yes.

20   MR. PATHMANABAN: And I'm sorry to interrupt,

21 Your Honor. Objection as misleading as this opinion was

22 rendered before the Court's construction of the term model

23 of function calls for the at least a part/portion of the

24 program.

25   THE COURT: All right. Well, that does have to

Trent Jaeger - Cross   2140

 1 be assumed.

 2   MR. GUZIOR: Your Honor, the opinion goes beyond

 3 the Court's construction of Dr. Jaeger taking the position

 4 that decision trees are not models of function call,

 5 whether the Court construed it in favor of Columbia or in

 6 favor of Norton.

 7   MR. PATHMANABAN: Your Honor, it's completely

 8 irrelevant. The Court has provided a construction of this

 9 very term, model of function calls for the at least a

10 part/portion of the program, and that construction came

11 well after Dr. Jaeger's rebuttal report. And he

12 subsequently provided a supplemental report based on the

13 Court's construction. So this opinion and the suggestion

14 with this line of questioning is completely improper and

15 irrelevant.

16   THE COURT: Do you guys have to argue this in

17 front of me? I can't believe it. Come on up.

18   (The following was out of the hearing of the

19   jury:)

20   MR. GUZIOR: Your Honor, in both Dr. Jaeger's

21 supplement after the Court's construction and in his

22 original report, he said that the decision tree was not a

23 model of function calls. He provided an opinion to the

24 jury today that was exactly the opposite.

25   THE COURT: So if it's after my construction,

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1 start with the second one.

2   MR. GUZIOR: Yeah, but in his opening report he

3 said that the decision tree was not a model of function

4 calls, regardless of how the Court construed the term.

5 And he has some very stark language saying that he does

6 not think the decision tree is a model of function calls.

7 It's directly contradictory to what he told the jury

8 today, and I'd like to get that out.

9   THE COURT: But if he's doing it without the

10 Court's construction, it's -- it's a problem. So if you

11 want to establish that he said that after my construction

12 and then perhaps go back and say that's not a change, then

13 I think that might be permissible.

14   MR. PATHMANABAN: If he wants to ask him about

15 his supplemental report based on the Court's construction

16 and try to suggest that it is inconsistent with his

17 opinion today, we have no objection to that, but this

18 report was rendered before the Court's construction. And

19 it's improper and misleading to suggest --

20   THE COURT: Well, it may be relevant if he says

21 it doesn't matter what the Court's construction is, and if

22 he then has my construction and says it's not a model of

23 function calls --

24   MR. GUZIOR: I'll establish that.

25   THE COURT: I think that if he does that, if

Trent Jaeger - Cross   2142

1 he's done it after my construction and he said before it

2 wouldn't matter what my construction is, then I think it's

3 permissible.

4   MR. GUZIOR: Thank you, Your Honor.

5   THE COURT: But, Mr. Guzior, you need to start

6 with that, not -- not going through all this other stuff.

7   MR. GUZIOR: I will.

8   THE COURT: You need to start with that.

9 Because otherwise it is too much leading and it is not

10 permissible.

11   MR. GUZIOR: Understood.

12   THE COURT: All right.

13   MR. PATHMANABAN: Thank you, Your Honor.

14   MR. GUZIOR: Thank you, Your Honor.

15   (The following was in open court:)

16   THE COURT: Mr. Guzior and -- can you all come

17 back up? I'm sorry. I'm sorry.

18   (The following was out of the hearing of the

19   jury:)

20   THE COURT: Okay. We're now almost at 5:00.

21 How much more do we have?

22   MR. GUZIOR: Probably have another 45 minutes

23 given how slow -- just all the objections have really

24 slowed me down.

25   MR. PATHMANABAN: Your Honor, Dr. Jaeger would

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 1 very much like to be excused before the weekend. He's got

 2 other obligations. So if he can finish today, that would

 3 be great. I don't expect a long redirect, very short.

 4   THE COURT: I didn't hear that.

 5   MR. PATHMANABAN: I said I don't expect a long

 6 redirect, a very short one.

 7   THE COURT: Another 45? You're losing the

 8 jurors now. It's -- I don't know what to tell you, but we

 9 had it estimated an hour and 20 minutes, but without

10 objections, right?

11   MR. GUZIOR: Yeah. And we've had about -- we've

12 had a lot of objections.

13   THE COURT: Which is fine.

14   MR. GUZIOR: That's fine.

15   THE COURT: So I'm not complaining about

16 objections, but I don't think we can take this jury until

17 6 or 6:15. I just -- because after cross, we have to take

18 a break, and then you have to do redirect, and it's --

19 it's too much for the jury.

20   And I've also made certain obligations with

21 respect to how late folks have to stay, whether we have

22 people who are prepared to do overtime, which, in the

23 government, often needs advance notice, and I have not

24 given that notice. So I can't -- I'm sorry.

25   MR. PATHMANABAN: If we can just try to

2144

1 accommodate him, you know, just he's got some family

2 commitments. So if it's past 5:45, I understand, but --

3   THE COURT: I'm not sure I'm going to take them

4 until 5:45 on this. It's -- you can talk to -- let's take

5 a recess, okay, and then we can work this out. All right?

6   MR. PATHMANABAN: Okay.

7   MR. GUZIOR: Thank you, Your Honor.

8   (The following was in open court:)

9   THE COURT: Mr. Guzior, I'm going to ask you,

10 are you using the source code anymore?

11   MR. GUZIOR: No, Your Honor.

12   THE COURT: So we should pull it back.

13   MR. GUZIOR: Yes, we'll take it back from the

14 jurors. Thank you for --

15   THE COURT: All right. So we need to have a --

16 as I call confab. I don't know what that means, but we

17 just need to talk, and if you all will take about a

18 ten-minute recess and we need to work out some logistics.

19 All right?

20   Everybody remain seated while the jury leaves

21 the court.

22   (The jury exited the courtroom.)

23   THE COURT: All right. So one thing we just

24 discussed was timing, and I think -- well, I know

25 Mr. Guzior just said he has 45 minutes more of cross and

2145

 1 | then there has to be redirect, and I don't think the jury

 2 | is going to make it that long.

 3 | Mr. Guzior, I will say, is usually quite

 4 | accurate about his timing, but there have been well-taken

 5 | objections along the way, which is what lawyers have to

 6 | do. So there's no -- no problem with that, obviously.

 7 | Mr. Guzior objected too.

 8 | But I -- I understand that there's a concern

 9 | about Dr. Jaeger, and I honestly don't know what to do

10 | about it.

11 | I'm going to put on the record also this is a

12 | government building, and I have to, the best I can, let

13 | folks know in advance if there's going to be necessary

14 | overtime and security. And I could arrange that, but

15 | really, my concern is that I think we're losing the jury

16 | anyhow.

17 | And so this is what I'm going to do. I'm going

18 | to take a recess, let you all figure it out.

19 | I know -- I've been told, sir, that you have

20 | family obligations and I don't know what to do about that.

21 | So I'm not unsympathetic to it. I don't have total

22 | control about how the evidence comes out, and so I'm going

23 | to take a recess and allow you all to see if you can reach

24 | some kind of agreement and then I will come back, unless

25 | you all have a different -- a different suggestion? No?

2146

1   MR. MORIN: Your Honor, just for one point of

2   clarification, of course, we won't talk substance, but may

3   we talk logistics with Dr. Jaeger?

4   THE COURT: Right. I would presume you would

5   all be talking in the room together only about logistics.

6   So you wouldn't have any kind of individual.

7   MR. MORIN: Of course.

8   THE COURT: It would be all together. That's

9   exactly what I meant.

10   And it may not terribly much matter, but I'm not

11 finding that there was a restriction on reports, for what

12 it's worth. I've been looking for the scheduling orders.

13   MR. CARR: Your Honor, I can offer, while we

14 were looking, I looked for the scheduling order, and I

15 believe it's the one that Judge Spencer entered back in

16 2014. What was it? Document 54. And he provides for

17 three reports.

18   THE COURT: Okay.

19   MR. CARR: And it doesn't say any more than

20 that.

21   MR. GUZIOR: I'm sorry that Your Honor is

22 getting --

23   THE COURT: Well, it's not going to happen in

24 front of the jury anyhow.

25   MR. CARR: Yeah.

2147

1   THE COURT: I mean, I've let it go forward. I

2   just want to -- I have looked at mine. We have not gotten

3   so far back as to go to Judge Spencer's. My memory is he

4   probably did have some kind of restriction. But it

5   certainly is -- I mean, we'll move on. I'll look at his,

6   and I'm sure you're right, Mr. Carr.

7   Okay. So we're going to take a recess.

8   (Recess taken from 4:49 p.m. until 5:12 p.m.)

9   THE COURT: All right. Have we reached any kind

10 of resolution?

11   MR. MORIN: Your Honor, we've spoken to the

12 relevant parties. To be clear, if possible, we'd like to

13 move along tonight, finish as much as we could, if not the

14 whole thing. We're told it might be as short as 30 or

15 35 minutes. I understand objections do it, and our

16 redirect will be very short.

17   That said, we can make arrangements and we will

18 be here ready to go on Monday morning for any leftover,

19 whether it's now or whether we don't get done after we

20 proceed more. We're going to be okay on our side,

21 Your Honor.

22   THE COURT: So I regret to say that I think we

23 should just stop now. I have been watching the jury, and

24 this is a lot of expert testimony, and I think it's not

25 going to do either side any good as far as juror attention

2148

1 or juror feeling inconvenienced if we continue. It's a

2 Friday night. And so I -- I also -- I think we just have

3 to let them go, and I understand the problem. I know, but

4 this is how trials go, unfortunately.

5   MR. MORIN: It's not a problem, Your Honor.

6 Like I said, we'll have arrangements to be here on Monday.

7 We'll be ready to go when the gavel hits on Monday.

8   THE COURT: I'm sorry, sir. I -- I don't -- I'm

9 all powerful except for just about everything. I can't

10 control this, and I do want you all to have the trials

11 that you need to have. We have been waiting a long time

12 for it. And I should think we have -- I think they are

13 paying attention and I don't want to lose them for

14 anybody's purposes. I think it will be better for both of

15 your cases.

16   MR. MORIN: We understand, Your Honor. Thank

17 you.

18   THE COURT: All right. Okay.

19   Yes, sir.

20   MR. BEENEY: Judge, I don't know -- I'd like --

21 after you've discharged the jury, I'd just like to have

22 five minutes about scheduling, but I don't know whether

23 you want to give the jury a sense of what we think we may

24 be able to accomplish next week. Because if the Court

25 does, I can kind of address that now. But if you'd prefer

2149

 1   not to --

 2   THE COURT: No. I think they want to know. If

 3   I were they, I'd want to know are we going until next

 4   Thursday or Friday.

 5   MR. BEENEY: That's why I'd like to raise it. I

 6   think they deserve to know.

 7   So, Your Honor, we've talked about this a little

 8   bit. I think we believe that we will finish the testimony

 9   on Monday. It may spill over a little bit until Tuesday,

10   but I think that's our best estimate, all counsel

11   conferring.

12   At that point -- you know, I've done it both

13   ways where the jury is charged before closing or after

14   closing. I don't know if Your Honor has a preference as

15   to which way that should go.

16   THE COURT: I usually do it before closing, I

17   think, because then you can say the judge instructed you.

18   MR. BEENEY: That's my preference certainly.

19   So I guess what I would propose to the Court is

20   that the jury be told that we think that on the current

21   schedule, we will finish the testimony of witnesses by the

22   end of the day on Monday, assuming we can go through on

23   Monday, that the Court will then charge the jury on

24   Tuesday. And then once the Court is done with the charge,

25   we'll have the closings, and then the jury will be able to

2150

 1 | deliberate we would think sometime, you know -- I know the

 2 | Court's charge will take a while, sometime, you know,

 3 | midafternoon on Tuesday, but I think that's, you know,

 4 | counsel's best estimate.

 5 | MR. LUMISH: May I, Your Honor?

 6 | THE COURT: Of course. It's just better on the

 7 | microphone.

 8 | MR. LUMISH: Of course.

 9 | It's close. We would prefer, Your Honor, if you

10 | would, to say Monday or maybe Tuesday morning. Just in

11 | case we go late, we don't want them to hold that against

12 | us as holding them longer than they thought they were

13 | going to be here. It's our case in chief at this point.

14 | So if you wouldn't mind saying Monday or maybe into

15 | Tuesday morning before we close evidence.

16 | THE COURT: Right. That's fine.

17 | MR. LUMISH: Thank you.

18 | THE COURT: We don't -- the whole reason we're

19 | stopping now is not to irritate them.

20 | MR. LUMISH: Of course.

21 | THE COURT: So I think that's wise.

22 | MR. LUMISH: Thank you.

23 | MR. BEENEY: If I could just do a couple -- the

24 | other things that I'd like to address for the Court in

25 | five or ten minutes don't require the jury. So --

2151

1   THE COURT: Okay. That's great.

2   MR. BEENEY: Thank you.

3   THE COURT: Let's bring them on in, please.

4   Mr. Guzior, you should probably be at the

5   lectern.

6   MR. GUZIOR: If I can approach?

7   THE COURT: Please.

8   (The jury entered the courtroom.)

9   THE COURT: All right. Well, welcome back. We

10   are going to let you go today. It's 5:15. It's Friday

11   night, and these lawyers are doing their jobs. So

12   whatever time we are taking away, I really don't want that

13   to affect certainly how you're taking in the evidence, but

14   part of the delay is me, if I'm deciding on something or

15   doing something else, but we really are doing this so that

16   you have the case you should, and we don't want to wear

17   you out. You know, we might not have that much more

18   today, but I think we're done. And that's -- I don't

19   think the parties disagree with that.

20   So we will start Monday at 9. So you know, it

21   is possible that we will finish all testimony Monday. It

22   may go over a little bit into Tuesday, but what that means

23   is that all that is left are my instructions and then

24   closing arguments.

25   So we did lose a day, but I think we're

2152

1 functionally still on schedule. And I want you to know

2 that we are all -- a day with you, obviously, is what I

3 meant. We are all working very hard to use your time as

4 best as we can, and there's not a person in this room that

5 wants to do otherwise. And they're not. I'm not having

6 to yell at anybody or do anything else. It's just -- it's

7 a case that requires good attention, which you all have

8 been giving it. So I want you to know that we thank you

9 for that. All right.

10   So you have a good weekend, the last weekend you

11 will have during this trial. So we -- we do appreciate

12 your good efforts. Okay?

13   All right. So be safe and obviously, leave your

14 notebooks.

15   A JUROR: Thank you.

16   (The jury exited the courtroom.)

17   THE COURT: Okay. I'm going to put on the

18 record that there was some palpable relief, I believe. So

19 you all can object to that if it's true, but I saw a bunch

20 of smiles, I think. So I think we've all earned their

21 good graces.

22   Thank you for being patient. And now you have

23 some things you'd like to address?

24   MR. BEENEY: Thank you.

25   THE COURT: Now, does Dr. Jaeger need to sit

2153

1   there?

2   I'm sorry, sir. Go sit comfortably wherever you

3   want to or you can stay if you wish, but I don't think

4   this --

5   THE WITNESS: I'll move.

6   THE COURT: Okay.

7   THE WITNESS: Thank you.

8   (Witness stood aside.)

9   MR. BEENEY: Judge, the most startling thing

10 I've learned today is that it's Friday night. Is it

11 really?

12   THE COURT: You know, I haven't actually been

13 paying very good attention to that. I've had many 1:00

14 events that I've tried to attend on the wrong day. So

15 yes, it's Friday.

16   MR. BEENEY: Judge, I just want to make sure

17 that we understand what we need to do to get the case to

18 the jury over the weekend.

19   By my count, we should put together a jury

20 binder, and we'll talk to Norton counsel to see if we can

21 agree on that. Whatever that number is, 10, 12, 15

22 exhibits, whatever it is that we think they should have

23 along with the charge and the patents, and there was

24 another thing that the Court thought should be for binders

25 for the jury to take back with them in deliberations. So

2154

1 we'll talk to Norton counsel about that, see if we can

2 agree over the weekend to get that ready so that they're

3 ready to go.

4   The other thing I think, Your Honor, is that on

5 the instructions --

6   THE COURT: I have three to rule on.

7   MR. BEENEY: I did want the Court to know, we

8 reached out a few days ago to Norton to try to reach a

9 compromise on the willfulness instruction, and I'm sure

10 they'll get back to us in due course. If that happens,

11 we'll let the Court know as soon as possible.

12   I don't think we're likely to reach an agreement

13 on the fraudulent concealment charges, which I think are

14 the other ones that are up in the air.

15   THE COURT: Right.

16   MR. BEENEY: But I think that's all we need to

17 do, that is, the parties need to do over the weekend to

18 get the case to the jury, I think.

19   THE COURT: Yes. I think -- obviously, the

20 verdict form I don't think I've returned to you the

21 version that I think I will propose and then you all can

22 respond. I usually do that when I give you the full set

23 of jury instructions, which is something I would like to

24 try to do over the weekend as if -- I will do it over the

25 weekend. This is all of our last weekend in this trial.

2155

1 So it will -- that's my call to arms, and I will do that.

2   MR. BEENEY: Thank you.

3   THE COURT: And then we can address whatever you

4 disagree with at some point during the day on Monday or

5 Monday evening on our time, not their time.

6   MR. BEENEY: Okay.

7   THE COURT: Okay.   And I know I have to rule on

8 Dr. Dacier and Dr. Nielson.   So I will be -- I'll be doing

9 that over the weekend also.

10   Yes, sir.

11   MR. LUMISH: If I may pile on a couple more

12 issues, Your Honor?

13   THE COURT: Yeah, come on in.

14   MR. LUMISH: A couple of housekeeping issues.

15   First, on the willfulness instruction, I

16 apologize to counsel.   We've been remiss.   They have sent

17 it to us and they asked us, they pinged us.   We will agree

18 to that proposal that they made.   So I think we'll have an

19 agreement we can submit to Your Honor on a willfulness

20 instruction shortly.

21   THE COURT: Good.

22   MR. LUMISH: My apologies for not getting back

23 to you on that.

24   Your Honor issued an order yesterday that said

25 demonstratives should be disclosed, and then today you

2156

1 pulled it back from crosses.

2   We would request that that order actually apply

3 to closings because we are doing our best to make sure we

4 don't cross the line. And so it would be helpful to know

5 in advance for me and for Mr. Morin whether there are

6 objections from the other side on things we want to put in

7 our closings, and we would like to do the same. Given

8 that there was an objection in openings, we're hoping to

9 avoid that again.

10   So the request would be, Your Honor, that your

11 order from yesterday apply to closing demonstratives, that

12 they be exchanged the evening before, and we can work out

13 a time. So that's one thing.

14   And then on 50(a)s, we have to get those to you,

15 Your Honor. Our plan, if it's acceptable to the Court, is

16 to submit them in writing, and we would probably do that

17 Tuesday morning as --

18   THE COURT: I'm sorry. The what?

19   MR. LUMISH: 50(a) JMOL motions.

20   THE COURT: Right. Okay. Sorry. I thought you

21 said 50 days.

22   MR. LUMISH: No. Sorry. 50(a)s, Your Honor.

23 And so our thinking was we would submit it in writing just

24 to make sure the record was preserved and do that on

25 Tuesday as evidence closed.

2157

1   THE COURT: Yes.

2   MR. LUMISH: But wanted to make sure that was

3 acceptable to the Court.

4   THE COURT: No. That is. I think we may have

5 talked about that, but I'm not sure. Yes, 50(a)s.

6   MR. LUMISH: I thought we did as well, but I

7 wanted to confirm it.

8   THE COURT: No. It's always good to be clear.

9   MR. LUMISH: Thank you, Your Honor. That's what

10 I had.

11   THE COURT: Okay. Is there any objection to

12 exchanging demonstratives for closings?

13   MR. BEENEY: There are, Your Honor, particularly

14 because I'm assuming that we will go first. I would like

15 to reserve a few minutes of our time. It gives them, you

16 know, the advantage where they get to, you know, know

17 where I'm going. I don't get to say much about where they

18 went.

19   And in the pretrial order, Your Honor, this

20 would have to actually be a motion for reconsideration

21 because the pretrial order says that we're not going to

22 exchange demonstratives.

23   THE COURT: Well, my memory is that you all

24 wanted the disclosures first in your -- originally. Maybe

25 I'm wrong. Maybe it was -- maybe it was Norton. It

2158

1 doesn't matter. I ruled that they will not be disclosed.

2   One of my issues is that there are these

3 objections, which you're absolutely allowed to make, but

4 they are lengthy. Sometimes they're complicated so they

5 take me a while to think about. And I don't -- I don't

6 want you all to be tripped up during your closings, nor do

7 I want to take a break with the jury if something has to

8 be argued.

9   And so I'm going to -- it is the case that you

10 don't normally change -- exchange the demonstratives, and

11 there is some advantage to being the second guy, although

12 there is rebuttal often, sometimes.

13   So I think I'm not going to make it required,

14 but I'm going to strongly encourage it because it is so

15 disruptive to have objections during any kind of argument,

16 and in my experience, quite rare. And so if you all are

17 thinking that there's anything that is close to

18 objectionable, I would encourage you to stray away from

19 it. I just -- it's -- you have every right to do whatever

20 you want with the demonstratives, and I want you to try

21 the case that you want to try. I've been trying to let

22 you do that.

23   So I just -- all I can do is ask, on behalf of

24 the jury, that you really think about from the other

25 side's -- stand in their shoes and really decide whether

2159

1 or not it's worth creating the demonstrative you want to

2 use.

3   MR. BEENEY: Yeah. And, Judge, so you may

4 recall from my opening, you know, my style is to -- I'm

5 not -- I don't like animations. I don't use them. I

6 don't like boxes with colors. I don't do that. I'm going

7 to use the evidence.

8   So to the extent I do anything other than use

9 the evidence or a timeline based on the evidence, I'll

10 turn it over, but I don't expect to have anything to turn

11 over because my, you know, demonstratives are going to be

12 the evidence, testimony, the documents, maybe a timeline

13 here or there. But I'm not -- I don't do animations. I

14 don't do boxes. I don't do circles. It won't be anything

15 that we haven't seen before in terms of the evidence. So

16 that's that.

17   And then just finally, Your Honor, will I be

18 able to reserve -- I'm not going to reserve half my time,

19 but will I be able to reserve on the order of 15 minutes

20 or so for rebuttal?

21   THE COURT: Reserve it, yes.

22   MR. BEENEY: Okay.

23   THE COURT: This is -- we have both common law

24 claims and patent claims, and so usually there's some kind

25 of response with respect to those kinds of claims at

2160

1   least.

2   MR. BEENEY: Great. Thank you.

3   THE COURT: All right.

4   All right. Does that answer everybody's

5   questions?

6   MR. LUMISH: It did. Thank you, Your Honor.

7   Nothing further from Norton.

8   THE COURT: All right. Nothing further from

9   Columbia?

10   MR. BEENEY: No, Your Honor. I hope you and

11   your staff have a great weekend, as best you can.

12   THE COURT: Yes. Oh, of course, we will, and so

13   will you all. It's worth having a good trial. That's all

14   I want on everybody's behalf, and we don't have that much

15   more to go. I think we're doing great. So it's our job,

16   and I'm sure that all of us are very happy this case is

17   going to trial because it's been a long wait.

18   So -- okay. So we'll recess until -- if we have

19   a dispute, Monday morning at 8:00, and if you're going to

20   have a dispute, please let me know as soon as you can. It

21   is rough to get an e-mail at 1 in the morning and then

22   take the bench at 8. I've been trying to accommodate you

23   as much as I can, but now we have two days in between. So

24   hopefully we'll be okay.

25   MR. MORIN: One thing I just thought of,

2161

1   Your Honor. You don't have to act on it at all, but it

2   may be that on Monday morning, if it's close to finishing

3   on Monday rather than trailing a little over to Tuesday,

4   may I suggest that that might be a day to go a little

5   long? So if any arrangements or warnings to the jury need

6   to be made in the interest of finishing the case, I was

7   just going to raise it. We might want to do that in the

8   morning, but that's, of course, up to Your Honor.

9   THE COURT: Right. Right. I -- I think they

10 would prefer that also. I do try to read them, and if I'm

11 reading that we've lost them, I'm not going to keep them.

12 We were starting to lose some folks. Not inappropriately,

13 but if folks, in the middle of testimony, I just think --

14 you know, it's not -- they're not sleeping, but they

15 aren't looking -- I think we're losing them as far as

16 frustration.

17   Okay. So -- but I -- your point is well taken,

18 and I will do that. And my bet is if they know it's the

19 end, they will want to stay longer. So that will be good

20 too.

21   All right. Okay. So we'll see you Monday

22 hopefully at 9.

23   (Recess taken from 5:31 p.m. until 5:34 p.m.)

24   THE CLERK: All right. So this is Kathy Hancock

25 with Judge Lauck's chambers. It is April the 22nd. We're

2162

1 doing the exhibit review for the day to confirm that we

2 have the exhibits that are on the record. I have --

3   MR. STRETTON: Paul Stretton.

4   MS. NGUYEN: Laura Nguyen for Norton.

5   THE CLERK: Our first witness today was

6 Dr. David Kane. We had PX-315, PX-505, and PX-398.

7   On cross, we had PX-288. We had I-EEE. It also

8 said PX-166 at the bottom. We had PX-1001 as a

9 demonstrative. PX-236, PX-235.

10   Then on redirect, we had PX-288 and PX-236.

11   Dr. Trent Jaeger, we had PX-830, PX-831, PX-471,

12 DX-DJ, DX-CI, PX-505, and PX-398.

13   MR. STRETTON: For the exhibits on the Kane

14 cross, we'd like to have those moved into evidence, all

15 except for PX-0166.

16   THE CLERK: Okay. They're already into

17 evidence.

18   MR. STRETTON: Wonderful.

19   THE COURT: Good. Except for the demonstrative.

20 The demonstrative is not.

21   MR. STRETTON: Yes.

22   THE COURT: Okay. All right. Let's put on the

23 record that everybody agrees.

24   MR. STRETTON: Yes.

25   MS. NGUYEN: Yes.

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1   MR. STRETTON: I agree.

2   MS. NGUYEN: I agree.

3   THE CLERK: Thank you. Have a good weekend.

4   MR. STRETTON: Thank you.

5   (The trial adjourned at 5:36 p.m.)

6

7   REPORTER'S CERTIFICATE

8   I, Tracy J. Stroh, OCR, RPR, Notary Public in and for

9 the Commonwealth of Virginia at large, and whose

10 commission expires September 30, 2023, Notary Registration

11 Number 7108255, do hereby certify that the pages contained

12 herein accurately reflect the stenographic notes taken by

13 me, to the best of my ability, in the above-styled action.

14   Given under my hand this 22nd day of April 2022.

15

16   _____/s/_____
                Tracy J. Stroh, RPR

17   _____/s/_____

18   Krista Liscio Harding, RMR

19   _____/s/_____

20   Diane J. Daffron, RPR, CCR

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1   I N D E X

2   WITNESSES

3   Examination By: Page

4   DAVID KANE
    Direct   – MR. LUMISH   1936
5   Cross   – MR. GUZIOR   1979
    Redirect   – MR. LUMISH   2026
6   TRENT JAEGER
    Direct   – MR. PATHMANABAN   2051
7   Cross   – MR. GUZIOR   2100

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